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LIVERPOOL IN 1859.

THE

PORT & TOWN OF LIVERPOOL,

AND THE

HARBOUR, DOCKS,

AND

COMMERCE OF THE MERSEY,

IN

1859.

EMBELLISHED WITH A PLAN,

FROM THE SURVEY OF 1857, SHOWING THE DOCKS AND HARBOURS OF LIVERPOOL AND BIRKENHEAD, AND THE SOUNDINGS OF THE MERSEY, FROM ITS ENTRANCE TO THE SLOYNE.

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TO THE

MERSEY DOCKS AND HARBOUR BOARD;

THE

CORPORATION OF LIVERPOOL;

AND THE

COMMERCIAL ASSOCIATIONS OF THE PORT;

THE ACCOMPANYING SKETCH OF THE

COMMERCE, SHIPPING, PUBLIC WORKS, AND PUBLIC

INSTITUTIONS OF LIVERPOOL,

IS INSCRIBED,

BY THEIR OBLIGED FRIEND AND SERVANT,

THE AUTHOR.

INTRODUCTION.

The object of this work is to bring together, in a moderate compass, and to arrange in a form easy of reference, an account of the principal facts, which explain and illustrate the present condition of the port of Liverpool, of its Shipping and Commerce, and of the Docks and Harbour of the river Mersey. These are at once the seat and the instruments of a commerce extending to every country on the face of the globe, and involving transactions amounting to upwards of one hundred millions sterling, in yearly value. The information contained in this work has been collected carefully, from a variety of sources, local and national, and has been compiled, and is now published, in the hope, that it may not only serve to show what has been done, and is at present doing, in the port of Liverpool, but may also assist in forming a correct judgment, as to the best mode of promoting the future prosperity, both of the port, and of the numerous and varied interests, connected with it.

TABLE OF CONTENTS.

PART I.

THE TOWN AND PORT OF LIVERPOOL.

THE COMMERCE OF LIVERPOOL.

THE STEAM NAVIGATION OF LIVERPOOL.

PART II.

THE PORT OF LIVERPOOL AND THE HARBOUR OF THE MERSEY.

THE CONSERVANCY OF THE MERSEY.

COMPARATIVE STATE OF THE PORT AND HARBOUR IN THE YEARS 1822 AND 1857.

THE NEW BIRKENHEAD DOCKS.

REPORT OF THE ACTING CONSERVATOR ON THE CONDITION OF THE PORT AT THE COMMENCEMENT OF THE PRESENT YEAR, 1859.

"Nor are his blessings to his banks confined,
But free and common as the sea or wind;
When he, to boast or to disperse his stores,
Full of the tributes of his fruitful shores,
Visits the world, and in his flying towers,
Brings home to us, and makes both Indies ours;
Finds wealth where 'tis, bestows it where it wants
Cities in deserts, woods in cities plants.
So that to us no thing, no place is strange,
While his wide bosom is the world's Exchange."

—*Sir John Denham on the River Thames: Cooper's Hill.*

PART I.

THE TOWN, COMMERCE, AND PUBLIC INSTITUTIONS OF LIVERPOOL.

Liverpool owes its position amongst the great communities of England entirely to its commerce and shipping, and no other seaport of the United Kingdom has risen to so a high a point of population and wealth by those means only. London, which alone rivals Liverpool in the greatness and extent of its commerce, owes its position, above all other cities, not only of England, but of the world, to a variety of powerful causes, of which its great and flourishing commerce is only one, though probably the most important, as well as the most permanent. The other seaports of the United Kingdom, though many of them flourishing in wealth, and some of them, aided by great manufacturing as well as commercial activity, have all been surpassed by Liverpool. The commerce of Liverpool is universal in its nature and vast in its extent. An ancient English writer described seaports as the gates of the kingdom; but ports like Liverpool and London, frequented by the ships and men, and crowded with the commodities, of all nations, are even more than this, they are the gates of the world.

THE POPULATION OF THE TOWN AND SUBURBS OF LIVERPOOL.

The population of the parliamentary borough of Liverpool, at the date of the last census, in 1851, amounted to 375,955 inhabitants; and the population of the suburbs, in which a large portion of the merchants and tradesmen of Liverpool reside, and in which they were enumerated by the census-takers, was at least 70,000 more. The increase of the town population, from 1841 to 1851, was from 286,487 to 376,005, or nearly 100,000 souls, making the rate of increase about 10,000 a-year. The rate of increase in the suburban villages, on the Lancashire side of the Mersey, and in Birkenhead, and the line of villages extending along the Cheshire side of the river, is probably at the rate of 5,000 a-year more. Hence the population, collected within four miles of the Liverpool Exchange, cannot be much, if anything, less, at the present time, than 600,000 souls.

THE OCCUPATIONS OF THE PEOPLE.

The account of the occupations of the people of Liverpool and the neighbourhood, given in the last census table, shows how completely they are dependent on commerce, shipping, and the trades connected with those pursuits. The whole population of Liverpool, Birkenhead, and the suburbs are contained in the four districts or unions of Liverpool, Toxteth Park, West Derby, and Wirral, and the occupations of the inhabitants of each of those districts were as follows:—

The Union of Liverpool, which is considerably less than

the present parliamentary borough, but which is co-extensive with the limits of the parish and of the ancient borough, contained a population of 258,346 inhabitants, at the date of the last census. Taking the whole of the population, above twenty years of age, it was found that 49·1 per cent. of them were engaged in pursuits connected with navigation, commerce, trade, mechanical arts, or in domestic service; that 4·5 were engaged in manufactures; 3·2 in mines or mining works; and less than one per cent.—only 0·8—in agriculture. The parish or union of Liverpool, forming the oldest and most densely peopled portion of the present borough, contains 2,220 acres of land, and, with trifling exceptions, is covered with houses, and laid out in streets, squares, docks, and quays.

The Toxteth Union, which includes a considerable portion of the present borough, contained, at the same time, a population of 61,334 inhabitants. The employments of the population, above twenty years of age, were as follows:—Navigation, shipping, commerce, trades, the mechanical arts, and domestic service, 42·6; manufactures, 3·6; mining and mineral works, 3·7; and agriculture, 4·7. The Toxteth Union extends over 3,780 acres of land. There is a slight tinge of rural life at the extremities of the district; but the part adjoining Liverpool, and known by the name of Harrington, is nearly as densely peopled as the ancient borough of Liverpool, and contains docks, shipbuilding yards, foundries, and manufactories, as well as crowded streets. The outer part of the district of Toxteth, once a royal deer park, consists of pleasant dingles winding down to the Mersey, of natural terraces on the banks of the river, and of woody hills, nearly all of which have been converted

into parks and pleasure grounds, and covered with villas and ornamental cottages. The beautiful district of Aigburth, described in old deeds as Ackbright, and named from the beauty of its oak woods, now covered with villas, and commanding the finest views of the estuary of the Mersey, the hills of Wirral, and the distant mountains of Wales, lies to the south of this district.

The Union of West Derby is still more extensive, and at the date of the last census contained a population of 91,945. The occupations of the inhabitants of this union were:—Navigation, shipping, commerce, trades, mechanical arts, and domestic service, 42·6; manufactures, 3·6; mining and minerals, 3·7; and agriculture, 4·7. The townships of Kirkdale and Everton, and the districts of Low-hill and Edge-hill, within the parliamentary boundary of Liverpool, form part of this union, and the finest of the Liverpool docks are situated within it. The greater portion of the district is crowded with population, and thousands more are pouring into it every year. Beyond the densely peopled district included in the borough of Liverpool, are the flourishing villages of Stanley, Old Swan, Tue Brook, Newsham, and Walton, all of which are chiefly inhabited by merchants and others engaged in the trade and commerce of Liverpool. This union is very extensive, covering 46,799 acres of land, and yet not a greater proportion, than 4·7, of its population is engaged in agriculture.

The population of the union of Wirral, which includes the town of Birkenhead, and all the populous villages on the Cheshire banks of the Mersey, contained 57,147 inhabitants at the last census. The occupations and means of

subsistence of the population, were as follows:—Navigation, shipping, trade, commerce, mechanical arts, and domestic service, 39·0; manufactures, 2; mining and mineral works, 3·2; agriculture, 9·3. Birkenhead is now the principal place in this union, and depends altogether on trade and commerce, which have raised it from the position of a hamlet of 120 inhabitants, in 1821, to that of a town of upwards of 30,000 inhabitants, in 1859. The flourishing villages of New Ferry, Rock Ferry, Tranmere, Oxton, Claughton, Wallasey, Egremont, and New Brighton, all owe their origin and rapid progress to the same cause. The other portions of the Union of Wirral are still devoted to agriculture; but every year a greater number of villas, erected by the more prosperous of the merchants and ship-owners of Liverpool, spring up, on the banks of one or other of the noble estuaries, which wash the opposite shores of the peninsula, in every sheltered valley which winds down to their banks, and on every lofty point, which commands a view of the hills of Cheshire, the mountains of Wales, and the ocean, covered with innumerable ships, passing into or out of the port of Liverpool.

It is only within the last thirty years, that the inhabitants of Liverpool have possessed such ample means, of uniting the pleasures of the country with the active occupations of the town. Since that time ten or twelve lines of omnibuses have been started, running to every village in the neighbourhood, and many of the pleasantest districts have been intersected by lines of railway, whilst, on the river Mersey, numerous lines of steamers, like so many floating bridges, give the inhabitants the power of exchanging, in a few moments, the healthy breezes of

the river and the sea, for the close atmosphere of the office, and present them with the prospect of a line of docks, and a movement of shipping, which, in extent and variety, are not to be surpassed, if equalled, in any seaport of the world.

The effect of these great facilities for locomotion has been to change the aspect both of the town and the surrounding country. Comparatively few large and beautiful dwelling-houses are now built in town, while thousands are scattered over the sea-shore, from Southport to Hoylake, or along both banks of the estuary, and the range of hills, commencing at Walton, and running through West Derby, Thingwall, Wavertree, Mossley Hill, Childwall, and Woolton, which everywhere command charming views of the sea, the river, or the country extending towards Knowsley, Huyton, Prescot, and of the hills beyond Runcorn. On the other hand, the town, whilst it has lost the large houses which it formerly contained, has been ornamented with some of the finest public buildings, and, more recently, with the handsomest ranges of offices, which exist in any town in the empire.

THE PROPERTY AND INCOME OF LIVERPOOL.

The amount of Property and Income Tax paid in Liverpool, in the year 1857, appears from returns laid before Parliament last session, to have been greater than that of any other town or city in the United Kingdom, with the exception of London. The amount of income returned to

the Property and Income Tax, under the different schedules, wds as follows :—

Under	Schedule A.	£1,850,408
„	Schedule B.	2,129
„	Schedule D.	5,279,836
	Total, ...	£7,132,373

THE SHIPPING, THE COMMERCE, AND THE NAVIGATION OF LIVERPOOL.

Commerce, shipping, and navigation supply the life's-blood of the social system, in this great port, which now possesses about one third part of the commerce of the United Kingdom, and carries on as great, if not a greater trade with foreign countries, and the British possessions abroad, than any other seaport in the world. London and New York stand in the same rank as Liverpool, as commercial cities, but in some respects, as a place of commerce, it surpasses even the great capitals of the Old and the New World.

THE SHIPPING AND NAVIGATION OF LIVERPOOL.

The amount of tonnage registered at, and belonging to, the port of Liverpool, is greater than that belonging to any other port of the United Kingdom. It appears from the Annual Statement of the Trade and Navigation of the United Kingdom with foreign countries, and the British

possessions, in the year 1857, published by the Board of Trade, in December, 1858 (page 27), that the burden of the vessels, registered in the port of Liverpool, on the 31st December, 1857, was 936,022 tons, and that of the vessels registered in the port of London, at the same date, was 859,140 tons, giving Liverpcol a superiority of 76,882 tons. No other port in the United Kingdom possesses even the half of this tonnage ; and, in 1858, the shipping of Liverpool had increased to 953,955 tons.

In addition to the shipping which is registered in the port, Liverpool is also visited every year by some million tons of shipping, belonging to other British ports, or to foreign countries. This is drawn to it by its extensive markets for foreign produce, its unrivalled export trade, and the great crowds of passengers and emigrants, who sail from the river Mersey, to all parts of the world, but more especially to the United States, Australia, and British America.

According to the statement already mentioned, the number of vessels engaged in the foreign and colonial trade, which entered the port of Liverpool, in the year 1857, was 4,528, with a burden of 2,329,928 tons; and the number which cleared out, in the same trades, was 5,003 vessels, with a burden of 2,535,952 tons. In the same year there entered the port of Liverpool, in the coasting trade, 9,677 vessels, with a burden of 1,513,210 tons ; and cleared out in that trade, 10,509 vessels, with a burden of 1,484,806 tons (p. 434). The total movement of shipping in and out of the port that year was 7,863,896 tons. But these figures, large as they are, do not show the whole movement of shipping through the port of Liverpool; for the quantity

of tonnage which paid dock dues in the last financial year of the Dock Trust, ending on the 24th of June, 1858, was 4,441,943 tons; and as nearly the whole of this tonnage, or an equivalent portion of the shipping which had entered in the latter part of the previous year, both entered and cleared out of the port, the movement of shipping through the port was little less than 9,000,000 tons.

THE COMMERCE OF LIVERPOOL.

Whilst the shipping which passes through the port of Liverpool amounts to between eight and nine millions of tons yearly, the value of the merchandise brought and conveyed by it, amounts to upwards of one hundred millions of pounds sterling. The imports consist of almost every article produced on the face of the earth, which the wants, the pleasures, and even the caprices of the British people render acceptable to them. The exports consist of the numerous articles of comfort and utility, which the abundant capital, the hereditary skill, the powerful and delicate machinery, and the inexhaustible mines and minerals this country enable the British producer to furnish to foreign nations, cheaper than they can produce them for themselves. Besides supplying the wants of their own countrymen, the merchants of Liverpool also import largely, chiefly from Asia, America, and Australia, commodities for the use of the continental nations, and transmit the manufactures of the continent, along with our own, to distant countries. In addition to these, the ships of the port furnish three-fourths of the emigrants from the United Kingdom, with cheap and quick passages to those regions

of North America, Africa, and Australia, which they are filling with the language, the manners, the freedom, and the institutions of Britain.

In the last year, for which we have a complete return, 1857, very nearly one-half of the products of British industry, exported to foreign countries and the British possessions, were shipped at Liverpool. In that year the total quantity of British products exported was £122,066,107; and of these, articles of the value of £55,173,756, were exported from Liverpool. In the same year, the value of the articles of British industry exported from London was £27,832,348; from Hull, £15,758,813; from Glasgow, £5,103,318; and from Southampton, £2,065,045. The aggregate value of the exports of the United Kingdom, for the year just ended, is somewhat less than that of 1857, and Liverpool, like other ports, has shared in the common depression. But the commerce of the port, though it fluctuates, from year to year, with the commerce of the empire, shows a steadiness of progression, which soon obliterates the marks of temporary pressure. Twenty years ago, in the year 1839, the value of the British products, sent from Liverpool, was £25,703,847; in 1857 it was £55,173,756, or more than twice as great; and the rate of increase was greater during the last five years than at any previous period. Nor is the ratio of increase likely to become less, with India rising into new activity, China and Japan thoroughly opened to the trade of the world, Australia advancing in wealth, at a rate surpassing all previous experience, and the Anglo-Saxon population of North America, doubling its numbers every twenty years.

In examining the long list of articles exported from Liverpool, it will be found that they are such as meet the regular and daily wants of the great mass of mankind, not such as are only called for by taste and luxury. This is the great characteristic of the industry of this country; and is at once a reason for the prodigious extension of British commerce, and a security for its permanency. The demand for luxuries and articles of taste must always be small in its extent, and precarious in its nature, but it is difficult to assign any limits to the demand for cotton, woollen, and linen fabrics, for iron, for coals, for machinery, and for other articles of universal and constant use.

The imports of Liverpool are nearly as valuable as the exports, and consist of the produce of every country and climate. The wide valley of the Mississippi, the banks of the Amazons, the plains of India, and the classic soil of Egypt, fill the market of Liverpool with cotton. Wool is brought to the shores of the Mersey, from thirty different countries, scattered round the temperate zones of the earth. The plains of South America, and the high lands of India, supply the hides of millions of cattle. The pastures of the Ohio furnish provisions for the spinners and weavers of Lancashire; whilst the grain grown on the banks of the St. Lawrence, the Delaware, the Loire, the Elbe, the Vistula, the Danube, and the Don, meets in the market of Liverpool, to furnish them with their daily bread. The olive woods of Italy, the palm groves of Africa, the plains of Belgium, the floating ice of Newfoundland, and the depths of the Arctic Seas, all furnish their varieties of oil. Copper and silver ore are brought in large quantities from South America, to be smelted with the coal of St. Helens.

Ceylon sends its coffee; the East and West Indies their sugar; America its rice; Bengal its jute; Honduras its mahogany; Peru its guano; the Malucces their spices; Maryland its tobacco; and the forests of America their timber. There is indeed no article of use in the arts, or in the support of life, which is not found in the long list of products imported into Liverpool.

THE SAILING VESSELS OF THE PORT.

The sailing vessels engaged in the foreign and coasting trade, together, show an increase of about 400,000 tons since 1851; but the sailing vessels in the coasting trade have not increased, probably from the greater competition of railways and steam-boats. The number of vessels discharging their cargoes at Runcorn, up the river, shows little change.

Year ending 1st June.	Foreign and Colonial Trade.	Coasting.	Runcorn.	Total.
1851	1,642,636	656,856	178,169	2,477,651
1852	1,728,100	648,675	221,743	2,598,518
1853	1,763,541	647,227	189,775	2,410,768
1854	2,044,491	647,268	203,094	2,691,719
1855	1,876,248	630,329	180,233	2,506,537
1856	2,146,153	645,972	185,836	2,792,125
1857	2,188,867	662,870	183,434	3,035,151
1858	2,040,981	618,451	183,022	2,842,514

The above figures are taken from the table of Dock and Light Dues received in the port of Liverpool, published by the Mersey Dock and Harbour Board last autumn, as are also the figures in the following table of the steam trade of the Mersey.

THE STEAM TONNAGE OF THE PORT.

Of the shipping which paid dock dues in the Mersey in the twelve months, ending 24th June, 1858, no less than 1,599,429 tons consisted of steamers, of which amount 1,213,638 tons was engaged in the coasting trade, and 385,791 in the trade with foreign countries. The following figures show that the tonnage of the steamers engaged in the trade with foreign countries, and the colonies, has trebled since the year 1851. The increase in the coasting steamers is much less rapid, but the amount of steam tonnage in that trade is very great.

STEAM TRADE OF THE MERSEY.

Year ending	Foreign Trade.	Coasting Trade.	Total.
	Tons.	Tons.	Tons.
June 1851	121,169	1,138,836	1,260,005
„ 1852	188,715	1,125,273	1,313,988
„ 1853	189,404	1,100,334	1,289.738
„ 1854	237,579	1,184,051	1,421,630
„ 1855	214,885	1,194,465	1,409,350
„ 1856	242,905	1,099,752	1,342,657
„ 1857	391,497	1,218,714	1,610,211
„ 1858	385,791	1,213,638	1,599,429

THE INCREASE OF SHIPPING IN THE PORT OF LIVERPOOL.

The amount of shipping, British and foreign, which paid dock dues to the Mersey Dock and Harbour Trust, in its last financial year, ending 24th June, 1858, was 4,441,943 tons. Large as this amount appears, it is not equal to that of the previous year, which was 4,645,362 tons.

The progress of the port, as shown by the tonnage of the vessels paying dock dues, will be seen from the following facts:—In the year 1823, the tonnage which paid dues, for the first time exceeded 1,000,000 tons, having that year amounted to 1,010,819 tons. In the year 1838, it first exceeded 2,000,000 tons, having that year amounted to 2,026,206 tons. In the year 1845, it first exceeded 3,000,000 tons, having that year amounted to 3,016,531. In the year 1854, it first exceeded 4,000,000 tons, having been as follows, in that and the succeeding years, to the present time:—

AMOUNT OF TONNAGE PAYING DOCK DUES IN THE MERSEY.

From the 24th of June, 1854, to the 24th of June, 1858.

1854	4,316,583	tons.
1855	4,096,160	,,
1856	4,320,618	,,
1857	4,645,362	,,
1858	4,441,943	,,

THE NUMBER OF VESSELS FROM AND TO DIFFERENT COUNTRIES.

The number of vessels which arrived in Liverpool, from different foreign countries, and from the British possessions abroad, amounted in the last year for which we have a complete and official return (1857) to 4,528. The number from each country and colony was as follows:— From the United States, 934 vessels

(of an average of more than 1,000 tons each); 493 from British America; 505 from Central and South America; 331 from the East Indies, Hong Kong and Australia; 317 from France; 295 from Spain; 169 from Portugal; 174 from the Italian States; 150 from the British West Indies; 123 from Belgium; 116 from Holland; 109 from Germany; 101 from Turkey; 98 from Egypt; 96 from Cuba and the foreign West Indies; 75 from Prussia; 74 from Denmark; 74 from foreign ports on the West Coast of Africa; 71 from the northern ports of Russia; 37 from British possessions on the Coast of Africa; 31 from the southern ports of Russia; 36 from the Channel Islands; 17 from China, exclusive of Hong Kong; 13 from Norway; 13 from Wallachia and Moldavia; 13 from Syria; 3 from Fernando Po; 11 from the Ionian Islands; 10 from Gibraltar and Malta; 11 from the Philippine Islands; 10 from Morocco; 7 from Sweden; 2 from Java; 7 from Greece; 1 from Tunis; and 1 from the Birman Empire.

The number of vessels which cleared at Liverpool, to foreign countries and the British possessions in the same year, was 5,003, namely:—To the United States, 842; to British North America, 454; to the East Indies, Hong Kong, and Australia, 517; to Central and South America, 597; to northern ports of Russia, 289; to the Italian States, 250; to France, 241; to Cuba and the Foreign West Indies, 205; to Holland, 175; to Belgium, 117; to Portugal, Azores, and Madeira, 142; to Spain, 177; to Gibraltar and Malta 115; to Malta, 127; to the British West Indies, 127; to Denmark, 98; to Germany, 64; to British Possessions in Africa, 57; to Egypt, 35; to the Channel Islands,

32; to Turkey, 82; to Norway, 35; to Moldavia and Wallachia, 14; to the Ionian Islands, 14; to China, exclusive of Hong Kong, 17; to Java, 16; to Aden, 27; to the Philippine Islands, 14; to the Cape de Verdes, 2; to Fernando Po, 6; to Greece, 2; to Syria, 6; to Tunis, 3; to Morocco, 1; to Birmah, 1; to the Sandwich Islands, 6; to the ports of the Red Sea, 2; to Arabia, 2; to Persia, 1.

The number of vessels passing to and fro, as shown by the preceding figures, may generally be taken as a test of the extent of the commerce with each country named.

THE CARGOES OF THE SHIPPING TO AND FROM LIVERPOOL.

The immense amount of shipping which frequents the port of Liverpool is brought there, by the extent and value of the freights, yielded by the carriage of goods and produce, of the value of upwards of a hundred millions sterling per annum, and by the profits on the conveying of from 150,000 to 200,000 passengers and emigrants, who sail from, or arrive in, the port every year. In order to render a port a desirable place for shipping, it is necessary that it should be suited to receive and dispose of large quantities of produce from abroad, and be capable of furnishing large quantities of produce and goods, for foreign countries. It is also necessary that both the inward and outward cargoes should consist of a mixture of light, heavy, and medium goods; and it is very desirable that there should be a large supply of passengers of all classes, to improve freights

on good cargoes of merchandise, and to make up for bad ones. All these advantages Liverpool possesses, in a high degree.

With regard, in the first place, to the cargoes of foreign and colonial produce which are imported into Liverpool. They are brought from every port and from every country of the globe, and they include every variety of merchandise. There are a few articles, however, of unusual extent and importance,—such as cotton, corn, timber, wool, sugar, tea, coffee, provisions, palm oil, hides, rice, and tobacco. In the last year of which we have a complete account, there were imported into Liverpool, from foreign countries and the colonies, the following quantities of those articles:—Cotton, 8,078,042 cwts.; wheat, 766,751 qrs.; barley, 52,091 qrs.; oats, 16,190 qrs.; peas, 19,259 qrs.; beans, 80,909 qrs.; Indian corn or maize, 473,580 qrs.; wheatmeal and flour, 1,134,520 cwts. (in addition to the large imports from Ireland); timber, 187,564 loads, not sawn or split; and 223,177 loads, sawn or split; wool (sheep and lambs), 41,247,359 lbs.; and alpaca and llama, 2,126,586 lbs.; sugar, 1,676,929 cwts.; tea, 8,439,711 lbs.; coffee, 1,788,523 lbs.; palm oil, 597,398 cwts.; hides, 229,117 cwts., wet; 51,518 cwts. dry; and 1,448,311 tanned; provisions and lard, upwards of 500,000 cwts.; madder roots, 309,735 cwts.; hemp, 175,708 cwts.; jute, 443,350 cwts.; rice, 1,734,449 cwts.; spirits, upwards of 1,700,000 gallons; tobacco, nearly 20,000,000 lbs.; and wine, upwards of 1,107,399 gallons. In the year 1858, the imports of cotton were still larger, but those of several articles showed a decline, from the pressure of the times.

With regard to cargoes for export, Liverpool possesses a decided advantage over all other ports, as relates both to heavy and light goods, and to passengers. The quantity of fine or light goods was as follows:—Cotton goods exported from Liverpool, 1,453,265,692 yards; cotton yarn, 52,077,443 lbs.; linen goods, 91,344,031 yards; linen yarn, 7,020,291 lbs.; woollen goods, 1,929,711 pieces; worsted and mixed stuffs, 52,503,085 yards; the value of the silk manufactures exported, was £836,613; the quantity of leather was 3,024,081 lbs.; of hardware and cutlery, 503,713 cwts. The heavy goods exported from Liverpool, consisted principally of the following articles:—coals, cinders, and culm, 543,794 tons; machinery, in value, upwards of a million sterling, viz., steam engines, £218,771; other kinds, £885,986; iron, in pigs, bars, wire, and castings, 275,060 tons; copper, unwrought, 149,272 cwts.; tin plates, in value £1,206,191; salt, 577,735 tons; soap, 130,433 tons; soda, 671,725 cwts.; and wool, 1,352,401 lbs.

In addition to these articles of British manufacture or production, there were also re-exported the following, (amongst other) articles of foreign or colonial produce:—Coffee, 1,513,517 lbs.; cotton, 293,504 cwts.; palm oil, 109,956 cwts.; rice, 417,702 cwts.; tea, 1,447,244 lbs.; tobacco, 3,703,545 lbs.; wool, 3,616,038 lbs.; alpaca and llama, 16,757 lbs.

Another branch of export trade has also sprung up of late, in the conveyance of foreign goods, landed in England, for shipment to more distant countries. Liverpool has obtained a considerable share of this trade, as will be seen from the following list of foreign goods, landed at Hull,

Hartlepool, and other places, and forwarded to Liverpool for shipment:—Beads and bugles of glass, 23,534 lbs.; cheese, 2,450 cwts.; corks, cut, 20,560 lbs.; corn, wheat, 3,684 qrs.; other kinds of grain, 4,706 qrs.; wheatmeal and flour, 168 qrs.; glass, (window) 2,918 cwts., and flint, 102,704 lbs.; opium, 79,802 lbs.; paper, 122,814 lbs.; rum, 38,928 gallons; brandy, 32,341 gallons; Geneva, 92,500 gallons; other kinds of spirits, 16,424 gallons; sugar, 805 cwts.; tea, 49,628 lbs.; tobacco, unmanufactured, 50,791 lbs., manufactured and cigars, 20,304 lbs.; vinegar, 3,180 gallons; wine, 40,249 gallons; and silk, woollen, linen, cotton, and leather manufactures, not separately specified, amounting in value to £135,542, received by way of Hull, and £7,022, by way of Hartlepool.

THE EMIGRANT AND PASSENGER TRADES.

Another branch of the shipping business, of the greatest importance, is the conveying of emigrants to the United States, British America, and Australia, and passengers to and from foreign countries. Liverpool has long possessed this trade pre-eminently, and though the last year was an unusually dull one, as relates to emigration, to all countries except Australia, there is no reason to fear that it will either cease, or even decrease materially. The rate of increase of the Anglo-Saxon and Anglo-Celtic races is not likely to diminish; and the tide of German emigration now flows strongly through England, and especially through Liverpool, which presents advantages for emigrants, even when compared with such flourishing ports as Hamburg and

Bremen. And beyond the ocean, in the United States, British America, Australia, and South Africa, the foundations have been laid, of vast communities, which will absorb the surplus of the British Islands, and of such of the continental nations, as have the same enterprising spirit as the Anglo-Saxon and Celt, for many generations to come. Emigration now performs the part in regulating population, which was formerly performed by pestilence, famine, and war.

The total number of emigrants from all the ports of the United Kingdom, in the year 1855, was 176,807, of which number 119,108 sailed from Liverpool; in 1856, 176,554, of whom 127,558 sailed from Liverpool; and in 1857, 212,875, of whom 155,647 sailed from Liverpool. Last year there was a considerable decrease of emigation, owing chiefly to unfavourable accounts, as to the opening for emigrants in the United States, Canada, and Australia. At Liverpool the falling off was very great, especially to the United States. The whole number of emigrants from Liverpool declined in that year to 80,722 souls. This, indeed, is a prodigious number, though it shows a great decline, especially in comparison with the extraordinary numbers of 1857. It is easily accounted for, by the fact of the great commercial convulsion of 1857 and 1858, which commenced, and raged with excessive violence in the United States, and afterwards spread round the world, even to Australia. During the greater portion of last year the condition of our own population was as good, if not better, than that of the population of the United States, Canada, and Australia; but the permanent rate of wages is higher in those countries than in the United

Kingdom; the profits of capital are twice as high; and three-fourths of the soil, in some cases, and nine-tenths of it in others, is still unoccupied. These are circumstances which must cause a great and permanent flow of population from Europe to those countries.

Until the last eight years, nearly the whole tide of British emigration flowed into the United States and British America; but, since the discovery of the gold-fields of Australia, and the abolition of penal labour in that country, a very considerable portion has flowed to Australia and New Zealand. The emigration to the United States, from all parts of the United Kingdom, was, in 1855, 103,414 persons; in 1856, 111,837; and in 1857, 126,905: to British America, in 1855, 17,966 persons; in 1856, 16,378; and in 1857, 21,001: to Australia, in 1855, 52,309; in 1856, 44,584; and in 1857, 61,248; and to other places, chiefly South Africa, in 1855, 3,118 persons; in 1856, 3,715; and in 1857, 3,721.

The particulars of the passenger traffic, as distinguished from the emigrant trade, are less accessible; but with regard to one great branch of that traffic, namely, that of passengers crossing the Atlantic in steamers, it is stated, apparently on authority, that the number of persons who crossed to and fro, in 1858, was 50,019, and that of this number 21,009 passed by way of Liverpool; 6,814 by way of Southampton and Bremen; 3,704 by way of Southampton and Havre; 3,784 by way of Glasgow; 3,401 by way of Galway; 4,153 by way of Bremen; and 9,254 by way of Hamburg.

The number of persons intending to emigrate to foreign countries, or the colonies, brought to Liverpool from the ports of Ireland, in coasting steamers, in the twelve months

ending September 30, 1855, was 100,354; in the twelve months ending at the same date in 1856, was 96,013; and in the twelve months ending at the same date in 1857, 108,353.

It was stated, in a paper read before the Association for the Promotion of Social Science, at its meeting in Liverpool, in 1858, that the total number of emigrants who had left the shores of Great Britain, from the year 1815 to the year 1857, was no less than 4,683,194, and that one-half of this number had emigrated since the year 1847. The number which proceeded to each of the great seats of emigration was said to have been:—To the United States, 2,830,687; to British America, 1,170,342; to Australia and New Zealand, 613,615, to other places, chiefly South Africa, 68,550.

THE AUSTRALIAN CLIPPERS.

In the course of the year 1858, 100 ships—of the average burden of upwards of 1,200 tons each, and the aggregate burden of 124,100 tons—sailed from Liverpool for Australia, carrying upwards of 24,090 passengers and emigrants. The following particulars respecting these ships, and the passengers and emigrants conveyed by them, have been collected from the books of Captain Schomberg, R. N., the emigration officer of the port:

In the course of the year 1858, 57 ships were despatched with private emigrants under the regulations of the Passengers' Act; 14 vessels were despatched, with a limited number of passengers, not under the regulations of that act; and 30 were despatched, with government emigrants.

The following are the names, descriptions, and destinations of the vessels of each class, with the names of the owners or charterers of the vessels, which include those of the principal promoters of this new and valuable trade:

PRIVATE EMIGRATION.

Date.	Ship's Name.	Tons.	P'sngrs	Destina'n.	Owners and Brokers.
Jan 6	Macaulay	1139	168	Melb'ne	J. Baines & Co
7	Royal Charter ...	2719	375	Ditto	Gibbs, Bright, & Co
15	Exodus	1110	103	Ditto	J. M. Walthew
21	Senator	777	162	Ditto	Wilson & Chambers
30	Florine	1042	162	Ditto	E. Thompson
Feb 6	Scottish Chief ...	1052	228	Ditto	J. Baines & Co
16	Zuleika	903	77	Ditto	J. M. Walthew
18	James Cheston...	1027	58	Ditto	J. Baines & Co
19	Winifred	1460	148	Ditto	Gibbs, Bright, & Co
20	Americana	1046	107	Ditto	Wilson & Chambers
Mar 2	Royal Saxon.....	1108	103	Ditto	E. Thompson
3	Northern Bride..	853	46	Ditto	Wilson & Chambers
10	Monsoon	1098	181	Ditto	J. Baines & Co
22	Columbia	1291	215	Ditto	Wilson & Chambers
31	Harmonides	1564	202	Ditto	E. Thompson
Aprl 7	Marco Polo	1625	357	Ditto	J. Baines & Co
17	Young America..	1961	288	Ditto	Gibbs, Bright, & Co
21	Gertrude	1309	208	Ditto	Wilson & Chambers
28	Salem	904	188	Ditto	E. Thompson
29	Sirocco	1130	114	Ditto	Wilson & Chambers
May 8	Donald M'Kay...	2605	436	Ditto	J. Baines & Co
17	Tornado..... ...	1075	196	Ditto	Gibbs, Bright, & Co
21	Beejapore	1676	219	Ditto	Wilson & Chambers
28	John Owens	1036	288	Ditto	E. Thompson
29	Simonds	1113	113	Ditto	Wilson & Chambers
June 10	Saldanha	1563	289	Ditto	J. Baines & Co
19	Sir Wm. Eyre ...	1315	141	Ditto	J. M. Walthew
21	Albion	1315	166	Ditto	Gibbs, Bright, & Co
21	Invincible	1671	187	Ditto	Wilson & Chambers
30	Gen. Windham...	794	65	Ditto	Ditto
July 3	Morning Light...	2377	302	Ditto	E. Thompson
10	Eastern City.....	1201	182	Ditto	J. Baines & Co
20	Red Jacket	1597	454	Ditto	Wilson & Chambers
20	Middlesex	1538	109	Ditto	Gibbs, Bright, & Co

Date.	Ship's Name.	Tons.	P'sngrs	Destina'n.	Owners and Brokers.
July 28	Morning Star ...	1534	169	Ditto	E. Thompson
Aug 7	Champion of Sea	1946	316	Ditto	J. Baines & Co
20	White Star	2339	570	Ditto	Wilson & Chambers
25	Rydal.....	222	28	P. Natal	Lamport & Holt
28	Sarah Dixon.....	1468	194	Melb'ne	E. Thompson
Sept 7	Ellen Stuart.....	1383	389	Ditto	J. Baines & Co
17	Meter.....	1831	279	Ditto	Gibbs, Bright, & Co
21	Mermaid	1233	322	Ditto	Wilson & Chambers
29	Flor. Nightingale	1188	362	Ditto	E. Thompson
29	Tasmania	1194	158	Ditto	Wilson & Chambers
Oct 6	Greyhound	1412	351	Ditto	J. Baines & Co
22	Royal Charter ...	2704	310	Ditto	Gibbs, Bright, & Co
22	Shalimar	1402	391	Ditto	Wilson & Chambers
28	Black Eagle	1557	258	Ditto	E. Thompson
30	Ben Nevis.....	1163	126	Ditto	Wilson & Chambers
Nov 6	Mindora	1277	245	Ditto	J. Baines & Co
20	Sultana	1316	194	Ditto	Wilson & Chambers
20	Great Britain ...	2722	352	Ditto	Gibbs, Bright, & Co
27	Diana.....	1174	167	Ditto	E. Thompson
Dec 4	Ocean Chief.....	1026	282	Ditto	J. Baines & Co
18	Eagle.....	1050	74	Ditto	Gibbs, Bright, & Co
21	Beechworth	1266	134	Ditto	Wilson & Chambers
		7,8606	12,122		

SHIPS CARRYING PASSENGERS, BUT NOT UNDER THE REGULATIONS OF THE PASSENGERS' ACT.

Date.	Ship's Name.	Tons.	P'sngrs	Destina'n.	Owners and Brokers.
Jan 18	Acadia	710	9	Melb'ne	Gibbs, Bright, & Co
21	Saxon King	454	7	Sydney	E. Thompson
Mar 1	Lady Head	664	6	Ditto	Ditto
17	Electric.....	1318	29	Melb'ne	J. Baines & Co
20	Casplan.....	1018	20	Ditto	J. M. Walthew
27	Princeza	141	10	P. Natal	Lamport & Holt
July 3	Anna.....	301	6	C. Town	J. Aitkin & Son
13	Mornington	948	7	Melb'ne	Kelso & Co
Aug 2	Bristow.....	374	10	Ad'laide	Jas. Dowie
17	Resolute	1112	40	Melb'ne	Gibbs, Bright, & Co
Sept 13	Earl of Eglinton..	1275	39	Ditto	Kelso & Co.
Oct 28	Princess Royal ...	1336	19	Ditto	Ditto
Nov 15	Victory.....	785	20	Ditto	J. M. Walthew
Dec 15	Medina	898	—	Ditto	J. Baines & Co
		11334	222		

GOVERNMENT EMIGRATION.

Date.	Ship's Name.	Tons.	P'sngrs	Destina'n.	Owners and Brokers.
Jan 12	Switzerland	640	238	Sydney	J. Baines & Co
16	Empress Eugenie	875	339	Melb'ne	W. D. Jacob
26	Arabian.....	1068	365	Ditto	Wilson & Chambers
Feb 8	Northern Light	1283	426	Sydney	Ditto
Mar 5	Herald of Morn'g	1355	450	Ditto	Ditto
9	Rising Sun	830	324	Melb'ne	J. Baines & Co
19	Castilian	1248	430	Sydney	E. Thompson
20	Gipsy Bride ...	1487	514	C. Town	J. Baines & Co
27	Utopian.....	947	342	Ad'laide	Ditto
Apr 15	Africa	1400	463	Melb'ne	Ditto
24	Aurifera	490	230	Algoa B.	— Fox
May 21	Indian Queen ...	1850	402	Ditto	J. Baines & Co
June 1	Frenchman	1155	416	Ad'laide	A. Stoddart
3	David M'Iver ...	917	377	Sydney	J. Baines & Co
9	Conway.....	1195	426	Melb'ne	Ditto
16	Alfred	1278	434	M'ton B.	Farnworth&Jardine
24	Bee.....	1325	425	Ditto	E. Thompson
July 1	Golianda	1124	878	Sydney	Wilson & Chambers
9	Edward Oliver...	1167	481	Table B.	Fernie Brothers
27	Mary Pleasant...	786	278	Sydney	J. Baines & Co
Aug 24	John and Lucy...	1235	394	Melb'ne	Ditto
Sep 3	Melbourne	1062	393	Ad'laide	Daunt & Co
16	Shooting Star ...	1518	417	Melb'ne	Currie & Co
23	Admiral Lyons	1133	448	Sydney	A. Stoddart
Oct 16	Annie Wilson ...	1191	391	Melb'ne	Wilson & Chambers
30	North.....	1238	415	Ad'laide	Coubrough & Co
Nov 8	Jessie Munn.....	834	298	Melb'ne	Wilson & Chambers
16	Vocalist.....	1004	413	Algoa B.	Fernie Brothers
27	Dirigo	1152	412	Melb'ne	Wilson & Chambers
Dec	Monica	1346	427	Ditto	J. Baines & Co
		34160	11746		

THE STEAM NAVIGATION OF LIVERPOOL.

This kingdom has greatly surpassed all other countries, in the energy and success with which it has applied steam navigation, to the commerce and intercourse of the sea and the ocean; and Liverpool has taken a most active and conspicuous part, in promoting this great branch of national

enterprise. Of the four million and a-half of tons of shipping, which paid dock dues in the port of Liverpool, in the year 1858, upwards of one million and a-half—or one-third of the whole—consisted of steamers. A variety of powerful causes combine, to give this country a decided superiority, in this most perfect and powerful of all means of maritime communication. The most important of these causes are:—First, the abundance and cheapness of capital, which renders it comparatively easy to procure the means of constructing even the most expensive class of steamers, some of which cost from £100,000 to £150,000, not to cite the case of that prodigy—the Leviathan or Great Eastern, which has cost nearly three quarters of a million; second, the great mechanical skill of our engine-builders and mechanists, who are able to supply the most perfect marine engines and machinery, which have yet been produced; third, the cheapness and abundance of iron, which gives our shipbuilders the choice of constructing their ships of iron or of wood, as may be most suitable to the purposes, for which they are built; fourth, the prodigious amount of personal communication, from this country, to the other parts of the empire, in the most remote regions of the world, as well as to all foreign countries; and, fifth, the immense value, and great variety, of the articles exported from and imported into this country, amounting to upwards of three hundred millions sterling in yearly value, and furnishing a large supply of those finer and more valuable kinds of merchandise, which will alone bear the cost of transport by steam. These are amongst the most powerful causes which have led to the great extension of British steam navigation, which has been witnessed during the last twenty

years; and of these causes, the fourth, and fifth—namely, the great amount of personal communication with other countries, and the great value and variety of the articles imported and exported, to and from this country, joined to a general spirit of commercial and maritime enterprise, have had the principal influence, in fixing so large a portion of the steam navigation of England, in the port of Liverpool. According to the last official account, the number of steamers, registered at Liverpool, was 203, at the commencement of January, 1858; but this does not include the British and North American Royal Mail Steamers, which are registered in the Clyde, though they have now sailed from Liverpool for upwards of eighteen years, nor many others, which are built and registered in other ports, and which are employed in trading between those ports and the river Mersey.

The vessels engaged in the steam trade of Liverpool, include every variety of steamer now afloat, from the light ferry steamer, which darts across the Mersey in a few minutes, to the finest ocean steamer, which steams across the Atlantic, in defiance of winds and storms, maintaining the communication between the old world and the new, with a swiftness, safety, and regularity, which have excited the admiration and applause of all nations.

THE STEAM COASTING TRADE.

On the coasts of England, Scotland, and Wales there is an almost daily communication from the river Mersey, to the Clyde in one direction, and to the Thames in another;

whilst on the coasts of Ireland there is scarcely a port on the east, west, north, or south, which is not in regular communication with the port of Liverpool.

From the commencement of steam navigation, there have been regular and powerful lines of steamers to Greenock, and Glasgow, both for the purposes of business, connected with that flourishing port and city; and also as an easy method of access for tourists, to the beauties of Loch Lomond, and the wild magnificence of the Western Highlands. In the summer months, the steamers from Liverpool, are in regular communication with other lines from the Clyde, which pass through the Kyles of Bute, the Crinan and the Caledonian canals, and the Great Caledonian lochs, to Inverness. Now that the railway from Inverness to Aberdeen, is finished, this line will be more used than ever, as the whole circuit of the Highlands may now be made by the power of steam. There is, also, a regular line of steam communication, between Liverpool and several points in the West of Scotland, as Ayr, Wigton, and the Water of Annan.

South of the Solway, there are lines of steamers to Carlisle, by Silloth Bay, affording an easy access to Newcastle and the Border; and also by way of Whitehaven. Three lines of steamers from Liverpool touch at Whitehaven, giving the tourist an easy access, at different points of the coast-railway, to the western end of Derwentwater, Buttermere, and Wastewater; and, in the summer months, lines of steamers ply from Liverpool to Ulverston and Lancaster, throwing open, at a trifling cost, the beautiful scenery of Coniston and Windermere.

During the whole year, the Isle of Man is accessible

by steam, always to Douglas, and generally to Ramsey; and in the summer months, thousands of tourists visit its romantic bays, its Norwegian and Norman ruins, and its commanding headlands, for health and pleasure.

South of the Mersey, a regular and almost daily communication is maintained with all the principal points on the coast of Wales. There are lines of steamers to the south bank of the Dee, at Mostyn, Holywell, and Bagillt; to the foot of the Vale of Clwyd, at Rhyl; to the grand scenery of the Ormshead, at Llandudno; to the walls and ruins of Conway, and the wild scenery on the banks of that river; and, above all, to the Menai Strait, full of natural beauty and of historic interest, from the ruins of Beaumaris to the grander ruins of Caernarvon, and forming a beautiful approach to the magnificence and grandeur of Snowdon. Beyond the straits there are lines of steamers from Liverpool to Portmadoc, at the foot of the Vale of Festiniog; to Aberystwith, at the base of Plinlimmon, to Milford Haven, to Swansea, and to Cardiff, all on the course to Bristol. There are also lines of steamers from Liverpool to London, calling at the principal ports on the south coast of England, and amongst them at Penzance, Falmouth, Plymouth, Portsmouth, Cowes, and Southampton. There is likewise a line of steamers to the Channel Islands, which calls at Falmouth and Plymouth.

THE STEAM TRADE WITH IRELAND.

There are two powerful and well organized lines of steamers from Liverpool to Dublin. Proceeding down the Irish coast, southward, there are also lines to Wexford,

Waterford, and to the noble harbour and fine city of Cork, from which point there is an easy access to the Lakes of Killarney. North of Dublin, there are lines to Drogheda, Dundalk, and Newry. There are three lines to Belfast, the manufacturing capital of Ireland, and one to Londonderry. On the west coast there are lines of steamers to and from Sligo, Westport, Ballina, Limerick, and the banks of the Shannon.

The several lines of steamers employed in keeping up the communication between the port of Liverpool, and the numerous places above mentioned, paid dock dues last year on 1,200,000 tons of shipping; and, taking into account both their goings and comings, they represent a movement of nearly two and a-half million tons of shipping and goods, and of more than 100,000 passengers. These steamers, with about half a million tons of sailing coasters, supply the means, by which a large portion of the foreign commodities, brought to Liverpool, are forwarded to various parts of the United Kingdom; and by which the produce of the coasts, and a portion of that of the interior, is brought to Liverpool, either to feed the artizans of the Midland and North-western Districts, or to be shipped, along with passengers and emigrants—English, Scotch, Irish, Welsh, and German—to the distant regions of the globe.

The competition of the numerous and powerful railways —the first of which originated on the banks of the Mersey, and many others of which (though originated in distant parts of England) have made their way, step by step, and at enormous cost, to Liverpool and Birkenhead—has exposed the coasting steamers of Great Britain to a severe

competition; though it is probable, all their influences being considered, that they create more business, even for coasters, than they destroy. These inland lines of communication will be described in the course of these sketches; and, for the present, it is only necessary to add, on this subject, that coasting steamers still hold their ground, and form one of the principal means of preserving and extending the commerce both of Liverpool and of London. This, however, is only one of several branches of steam navigation and the steam trade, which have sprung up in Liverpool, during the last twenty years.

STEAM TRADE WITH THE CONTINENT AND THE MEDITERRANEAN.

The western coasts of Great Britain, and the coasts of Ireland are not more regularly, although more frequently, visited by Liverpool steamers, than the coasts of Europe, from the mouth of the Elbe, at Hamburg, to Constantinople and the Bosphorus. There are now regular lines of steamers from Liverpool to the entrance of the Muese and the Rhine at Rotterdam, of the Scheldt at Antwerp, of the Seine at Havre, of the Loire at Nantes, of the Charente at Charente, and of the Garonne at Bourdeaux. Along the coasts of Spain and Portugal there are Liverpool lines of steamers to San Sebastian, Bilboa, Santander, Corunna, Carril, and Vigo; to Oporto and Lisbon; to Cadiz, to Malaga, Carthagena, Alicante, Valencia, and Barcelona; and to the south of France, at Marseilles. Along the coasts of Italy and Sicily there is

scarcely a port which is not visited by Liverpool steamers. They touch regularly at Genoa and Leghorn, and occasionally at Civita Vecchia. They also call regularly at Naples, Messina, Palermo, Ancona, and Trieste. In the Ionian Islands, Greece, and European Turkey, they call at Corfu, at the Piræus of Athens, Salonica, Syra, in the Archipelago, and Constantinople. In Asiatic Turkey they ascend the Black Sea, as far as Trebizonde, which for two thousand years has been the principal point of communication with Persia. They touch at Smyrna, the capital of Asia Minor; at Alexandretta, the port of Aleppo, the capital of Northern Syria, and at Beirout, the port of Damascus; ultimately proceeding to Alexandria. In their goings and comings they call continually at the three great British positions in the Mediterranean, Gibraltar, Malta, and Corfu. The places above enumerated include almost every port, of any commercial activity, in the Mediterranean. The southern shore of that sea, once the scene of the commerce of Carthage, is now a wilderness and a den of robbers, except at Algeria, where the French have partially established order, but have rigorously excluded commercial freedom.

Liverpool is now the western starting point, of the new Russian line of steamers to Odessa.

THE STEAM TRADE ALONG THE COAST OF AFRICA.

The African Royal Mail Steamers, which were originated chiefly by the enterprise of Liverpool men, now run monthly from the port of Liverpool. These fine vessels call at the following places:—at the Islands of Madeira

and Teneriffe, at Goree, at Sierra Leone, at Monrovia, at Cape Coast Castle, at Accra, at Lagos, at Bonny, at Old Calabar, at Cameroons, at Fernando Po, and, for passengers, at Bathurst. These are all the principal trading points, along a coast 1,500 miles in length, extending from the river Gambia to the Bight of Biafra. There is already a large, and valuable trade in palm oil on this coast, which, with other articles of African produce, and the ships which convey them and the returns for them, yields a revenue of £7,258 to the docks. There is no product of tropical climates which this rich country, and the docile and much injured people who inhabit it, cannot and will not produce, provided the peaceful pursuits of industry are not disturbed and defeated by the machinations of man-stealers, hunting for slaves. The establishment of a line of steamers along this coast will, it is to be hoped, prove equally useful, in promoting legitimate trade, and in exposing and putting down man-stealing and murder.

THE STEAM TRADE WITH AMERICA.

There are three lines of steamships from Liverpool to America.

The first consists of the British and North American Royal Mail Steamers, which have now made the voyage across the Atlantic, for a period of eighteen years, with perfect success, and unfailing regularity. Liverpool and New York may be considered the head-quarters of this line of steamers, although they start for Boston, on alternate voyages, and call at Halifax, to land her Majesty's mails. No places could have been better chosen, for New York is

the real capital of the United States, and both that city and Boston are well situated for intercourse with the interior; whilst Halifax possesses a fine harbour, and forms a central position, for communication with Nova Scotia, New Brunswick, Newfoundland, Prince Edward's Island, and the lower portion of Canada, all of which have important interests, in connection with the mother country, as well as with the commerce of Liverpool.

A second line of steamers, consisting of powerful screw steam-ships, performs the voyage from Liverpool to New York, proceeding thence southward to Philadelphia; which has also a great trade of its own, besides affording easy access, by railway, to the Southern and Central States.

A third line of steamships runs to Portland, in the State of Maine, whence it communicates with Quebec and Montreal, by railway, and with Upper Canada, and the Northern States of the American Union, by the St. Lawrence, which is now one of the greatest and most perfect lines of water communication in the world, and is becoming the principal highway into the interior of the North American Continent.

The Pacific Steam Navigation Company, which keeps up the principal communication along the west coast of South America, is also a Liverpool Company. Its ships are of the highest class, and furnish the best means of communication from Panama to Valparaiso, calling at the chief ports of Ecuador, Peru, Bolivia, and Chili, along a coast some thousand miles in length.

We find the following statement, as to the comparative speed, of the different lines of steamers, plying between

Europe and America, in one of the London papers at the commencement of the present year:

Screw and Paddle Steamers Across the Atlantic.—Much dispute has arisen about the comparative length of the eastern and western passages, across the North Atlantic, by paddle and screw steamers, to and from different ports, in this country and in North America. During the year just ended, 281 North Atlantic voyages were made by the mail and passenger steamers. The following was the average of the eastern voyages of each line of steamers, viz., from New York to Liverpool by Cunard's (the British and North American Royal Mail steamers), 10 days 20 hours; Collins', 11 days 14 hours; Liverpool screws, 13 days 3 hours. To Southampton, by Croskey's, 12 days 19 hours; Vanderbilt's, 12 days 10 hours; Hamburg screws, 12 days 22 hours; Bremen screws, 13 days 14 hours. To Glasgow, by the Glasgow screws, 14 days 10 hours. To Galway, *via* Newfoundland, by Lever's, 16 days. From Boston to Liverpool, by Cunard's, 11 days 8 hours; and from Portland to Liverpool, by the Portland screws, 12 days 20 hours.—The following was the average of the western passages of each line of steamers, viz., from Liverpool to New York, by Cunard's, 12 days 13 hours; by Collins', 14 days 16 hours; Liverpool screws, 13 days 21 hours. From Southampton, by Croskey's, 13 days 8 hours; Vanderbilt's, 13 days 16 hours; Hamburg screws, 13 days 21 hours; Bremen screws, 15 days 14 hours. From Glasgow, by the Glasgow screws, 15 days 14 hours. From Galway, *via* Newfoundland, by Lever's, 15 days 21 hours. From Liverpool to Boston, by Cunard's, 12 days 6 hours; to Portland, by the Portland screws, 12 days 20 hours. During the past year, two of the North Atlantic steamers were lost, viz., the New York and Austria; the Arabia and Europa came into collision; the City of Baltimore was obliged to put into Halifax to repair machinery, and the Ariel to put into the same port short of coals. Forty steamers were employed in performing the 281 voyages; and these ships ran a distance, throughout the year, of a million miles; burned 150,000 tons of coal; carried upwards of 50,000 passengers, who paid about £800,000 passage money. Out of the 50,000 passengers, nearly 500 lost their lives in crossing the Atlantic.

The great loss of life, mentioned above, was caused by the burning of the Austria, one of the Hamburg steamers. No lives were lost in the collision of the Arabia and Europa, which took place in a dense fog. In giving the

above statement, however, we must add, that regularity and safety are of as much consequence as speed; and that, in those respects, as well as in speed, the Liverpool steam-ships are second to none on the ocean.

THE STEAM-SHIP TRADE WITH AUSTRALIA.

Some of the largest steam-ships on the ocean, amongst which we may mention the Great Britain and the Royal Charter, join with the lines of swift clippers, in maintaining the communication from Liverpool to Australia; but much the greater part of the passenger trade to Australia and New Zealand is carried on in those beautiful clipper sailing ships, which have secured to the port of Liverpool a large share of the trade with those countries, and which have already been spoken of.

SUMMARY OF THE STEAM TRADE OF LIVERPOOL.

The above are regular lines of steamers, but there is also a considerable casual trade in steam vessels from Liverpool. The following is an account of the amounts of steam tonnage which entered and cleared from Liverpool in 1857, and of all the countries from which it arrived, and to which it proceeded.

The amount which entered the port was as follows:— From Russia, northern ports, 1,040 tons; Prussia, 762; Hanse Towns, 8,704; Holland, 18,787; France, 45,809; Portugal, Azores, and Madeira, 18,060; Spain, 17,759;

Fernando Po, 828; Sardinia, 18,627; Tuscany, 2,808; Papal Territories, 1,624; Two Sicilies, 2,088; Austria, 22,536; Greece, 2,275; Turkey, 36,261; Syria, 4,313; Egypt, 18,353; United States, 143,147; Brazil, 847; West Coast of Africa, 3,988; Malta, 972; North American Colonies, 16,047; Australia, 6,061; making the total steam tonnage which entered the port, from foreign countries and the colonies, 391,697.

In the same year there cleared from Liverpool, for foreign countries and the colonies, the following amount of steam tonnage:—To Russia, northern ports, 1,520 tons; Denmark, 435; Prussia, 950; Hanse Towns, 8,106; Holland, 16,729; France, 40,325; Portugal and Madeira, 18,867; Spain, 22,923; Sardinia, 25,457; Papal Territories, 812; Austria, 23,073; Turkey, 19,733; Syria, 2,046; Egypt, 15,121; United States, 138,456; St. Thomas, 230; Brazil, 847; Uruguay, 150; West Coast of Africa, 2,208; Arabia, 71; Gibraltar, 2,700; Malta, 19,300; Ionian Islands, 584; North American Colonies, 18,276; West Indies, 1,030; Australia, 3,897; Hong Kong, 2,626; East Indies, 3,126; Ceylon, 500; Cape of Good Hope, 1,007; making the total amount of steam tonnage cleared 391,113.

The total steam tonnage which entered and cleared for foreign countries, in 1857, was thus 782,720 tons.

NUMBER, TONNAGE, AND NATIONALITY OF THE SHIPS WHICH SAILED FROM LIVERPOOL, IN THE YEAR 1858.

The number of the vessels of all nations which cleared from the port of Liverpool, for foreign countries and the

colonies, from the 1st January to the 31st December, 1858, appears from the accounts of the Custom House to have been 4,706 vessels, measuring 2,422,928 tons. Of these, the number of sailing vessels was 4,195, of 2,059,106 tons; and of steamers, 511, of 363,822 tons. In comparison with the previous year, this shows a decrease of 297 vessels, and 113,024 tons, the number of sailing vessels in 1857 having been 4,466, and steamers 537, and their capacity, 2,535,952 tons.

In examining the nationality of the vessels which cleared out of the port in 1858, we find the following results:

The number of the British vessels which cleared out to foreign countries and the British possessions abroad, including both steamers and sailing vessels, was 2,738, of 1,288,207 tons, in the total of 2,422,928 tons; the tonnage of the American (United States) was 790 vessels, of 834,635 tons; that of the French was 218 vessels, of 34,526 tons; that of the Prussian was 103 vessels, of 31,155 tons; that of the Spanish was 156 vessels, of 49,786 tons; that of the Dutch was 101 vessels, of 18,166 tons, and of the Belgian 94 vessels, of 17,299 tons; that of the Danish was 98 vessels, of 14,633 tons; that of the Norwegian was 76 vessels, of 19,561 tons; that of the Hamburg was 44 vessels, of 12,285 tons; that of Bremen, was 23 vessels, of 16,033 tons; that of the Portuguese was 48 vessels, of 7,059 tons; that of the Austrian was 42 vessels, of 14,640 tons; that of the Hanoverian, was 25 vessels, of 3,503 tons; that of the Swedish was 25 vessels, of 6,431 tons; that of Mecklenburg and Knyphausen was 11 vessels, of 2,549 tons; that of Sardinia, was 13 vessels,

of 3,024 tons; that of Tuscany, was 4 vessels, of 1,067 tons; of the Papal States, 1 vessel of 187 tons; of Naples and Sicily, 15 vessels of 3,627 tons; of Greece, 12 vessels of 3,255 tons; of Morocco, 1 vessel of 110 tons; of Turkey, 24 vessels of 20,464 tons; of Russia, 20 vessels of 7,693 tons; of Brazil, 3 vessels of 301 tons; of Uruguay, 1 vessel of 314 tons; of Chili, 1 vessel of 566 tons; of Peru, 1 vessel of 301 tons.

It will be seen, from the above figures, that the shipping of the United Kingdom and of the United States greatly preponderate over all others, in the port of Liverpool. In the trade with what we call foreign countries, which includes their own, the American sailing vessels greatly exceed the British in tonnage, though not in the number of vessels,—the American vessels being 713, and their capacity 755,710 tons; whilst the British vessels, though 1,257 in number, were only 364,439 in tonnage. In the trade with the British Possessions abroad, which is equally open to both, the British shipping and tonnage is much the greater, the British vessels being 913, and tonnage 531,021, whilst the American vessels are 75, and the tonnage is 75,127. In steamers the ascendancy of the British shipping is more decided, the British steamers being 431, with a capacity of 323,891 tons; the United steamers only 2, with a burden of 3,798 tons.

The above statement is supplied by the Liverpool Bill of Entry, and is, no doubt, correct, being founded on the Customs returns. The number of vessels which entered is not given, but would not be materially different; though probably somewhat less, Liverpool being pre-eminently the shipping port of the United Kingdom.

The following shows the numbers in a tabular form :

SHIPS WHICH CLEARED OUT OF LIVERPOOL IN 1858.

Nations.	Sailing Vessels.		Steam Ships.		Total.	
	Ships.	Tons.	Ships.	Tons.	Sailing and Steam Ships.	Tonnage.
United Kingdom..	2292	960062	431	323891	2723	1,283,953
Russia.....	18	7038	2	655	20	7,693
Sweden	25	6431	...	...	25	6,431
Norway	76	19561	...	...	76	19,561
Denmark	93	13332	5	1301	98	14,633
Prussia	103	31155	...	...	103	31,155
Mecklenburgh ...	21	5621	...	...	21	5,621
Hanover	25	3389	...	...	25	3,389
Oldenburgh	11	2549	...	...	11	2,549
Hamburgh	44	12285	...	...	44	12,285
Bremen	23	16033	...	...	23	16,033
Holland	99	17272	...	...	99	17,272
Belgium	94	17229	...	...	94	17,229
France.....	211	32638	7	1888	218	34,526
Spain	109	28145	47	21641	256	49,786
Portugal.....	48	7059	...	...	48	7,059
Sardinia	13	2484	...	...	13	2,484
Tuscany	4	1067	...	...	4	1,067
Papal States	1	187	...	...	1	187
Sicily	15	3627	...	...	15	3,627
Austria	42	14640	...	...	42	14,640
Greece.....	12	3255	...	...	12	3,255
Turkey	24	20464	...	...	24	20,464
Morocco	1	110	...	...	1	110
U. S. of America.	788	830837	2	3798	790	834,635
Brazil	3	301	...	...	3	301
Uruguay.....	1	314	...	...	1	314
Chili	1	566	...	...	1	566
Peru	1	801	...	...	1	801

THE COMMERCE OF LIVERPOOL WITH DIFFERENT COUNTRIES.

The commerce of Liverpool is derived from, and its shipping employed in, the trade of every country on the

face of the globe. Those countries are divided into twelve groups, in the statistical statements of the Mersey Docks and Harbour Board, and it will be convenient to follow that arrangement, in giving a brief sketch of the present extent, and of the recent progress, of the trade with each of those countries. We shall afterwards give a sketch of some of the principal trades of the port, and more especially of the cotton, corn, and timber trades, which are the greatest in extent and value.

The twelve countries or groups, into which the trade of the port is divided, in the statistical statements of the Dock Board, with the amount yielded by each, in the year 1858, were as follows :—The United States of America, £137,156 ; East Indies and China, £48,650; the Countries on the shores of the Mediterranean, £35,634; British America and Newfoundland, £32,353 ; the Continent of Europe, from the Mediterranean to the Baltic, £17,629 ; the West Indies and Gulf of Mexico, £17,124 ; the Brazils and the River Plate, £13,855; the West Coast of America, £11,128 ; the West Coast of Africa, £7,258 ; the countries on the Baltic, £6,327; Australia and New Zealand, £6,144; to which we add the Coasting Trade of the British Islands, £28,671, making a total of £363,935.

THE TRADE WITH THE UNITED STATES.

The trade with the United States stands first, from the vastness of its extent, and the great amount of shipping which it employs.

The yearly value of the imports into the United Kingdom from the United States, according to the last Annual

Statement of Trade and Navigation, was £33,647,227; and the value of the exports was £18,552,857 of British products, besides £433,082 to California, and £1,072,538 of foreign products, making a total of £53,705,704 a year. This immense trade gave employment, in the same year, to 2,749 ships, of 2,631,805 tons. Of this vast trade, at least three-fourths was carried on through the port of Liverpool. The shipping which entered the port of Liverpool from the United States, in that year, amounted to 934 vessels, of 983,403 tons; and that which cleared, to 842 vessels, of 928,584 tons. The average size of these vessels was upwards of 1,000 tons each; and that of many of the steamers was from 2,500 to 3,000 tons each, and, in some cases, 3,500 tons.

According to the accounts of the Liverpool Dock Estate the amount paid by the shipping and the merchandise in the trade with the United States, was £137,156, out of a total sum of £363,035, received that year for dues on tonnage and merchandise, or more than one-third of the whole.

The rapid growth, as well as the prodigious extent of the trade with the United States of America, are well shown in these accounts. In the year 1842, the amount derived from the dues on tonnage, in the American trade, and goods received from, and shipped to the United States, was £66,728, whilst last year they produced £137,156. The smallest amount which the trade with the United States, including shipping and goods, has yielded to the dock estate of Liverpool, in any year since 1842, is £74,268.

The amounts of the last three years, which are much

the largest of the whole period, were as follows:—In 1856, £153,958; in 1857, £173,414; and in 1858, £137,156.

The following table of dues paid, will show the yearly fluctuations, and the permanent progress, of the trade of the United States with Liverpool, from 1842 to 1858:—

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	66,748	16	11	1851	98,000	9	8
1843	90,571	1	4	1852	102,649	17	2
1844	77,029	8	6	1853	124,554	7	10
1845	99,285	11	9	1854	148,565	15	5
1846	87,057	1	10	1855	113,914	16	8
1847	112,458	17	2	1856	150,958	3	11
1848	91,707	0	3	1857	173,414	16	2
1849	103,854	8	11	1858	137,156	5	2
1850	74,268	1	0				

THE EAST INDIA AND CHINA TRADE.

The trade with India and China is also of great extent, and has increased rapidly in magnitude. In 1857 the value of the imports into the United Kingdom from the British East Indies, was £18,650,223; from Singapore, £940,181; from Ceylon, £1,503,897; from Mauritius, £2,288,188; from the Cape, £1,705,543; from Natal, £88,174; and from China, £11,448,639. These, with the exception of the Cape and Natal, are the countries which were formerly included within the limits of the East India Company. The value of their imports was £36,799,035. The value of the British and foreign merchandise exported to them, in the same year, was as follows:—British mer-

chandise to East Indies, £11,666,714; to Singapore, £896,282; to Ceylon, £516,657; to Aden, £37,367; to Mauritius, £663,554; to the Cape, £1,720,092; to Natal, £120,546; to China, £1,728,885; and to Hong Kong, £721,097:—Total, £19,944,084. The balance of nearly £17,000,000 was paid in silver.

The trade with the East Indies from the port of Liverpool, which did not exist previous to the first relaxation of the East India Company's Charter, in 1814, and that with China, which did not exist until after the abolition of the trading powers of the company, in 1832, is now the second trade of the port, and is increasing more rapidly at the present time than it ever did before.

In 1842, the tonnage and merchandise engaged in the East India and China trade, produced to the dock estate, a revenue of £18,099; and in 1858, they produced £48,650. The smallest amount which the India and China trade have produced, in any year since 1842, was £14,529, in 1848,—a year of great commercial distress. The income from this trade, in each of the last three years, was—in 1856, £37,277; in 1857, £43,178; and in 1858, £48,650.

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	18,899	0	1	1851	21,189	2	2
1843	18,441	10	10	1852	19,314	12	3
1844	17,984	14	5	1853	21,910	17	7
1845	21,330	15	0	1854	24,508	12	0
1846	17,511	4	1	1855	25,396	13	3
1847	15,295	10	7	1856	37,277	2	2
1848	14,529	2	8	1857	43,178	8	7
1849	16,327	2	9	1858	48,650	12	11
1850	16,800	16	9				

THE TRADE WITH THE MEDITERRANEAN.

Next in the amount of revenue which it produces to the dock estate, is the trade with the Mediterranean, the Adriatic, and the Black Sea. The wonderful development of the steam navigation of Liverpool in these seas, from Gibraltar to Trebizonde, almost on the frontiers of Persia, has caused a very rapid increase in the revenue from this source. In 1842 this branch of trade produced an income of £14,256; in 1858 of £35,634. The smallest yearly amount which it has yielded, since the former date, was in 1844, when it produced £12,675. The revenue of the three last years was as follows:—£30,531 in 1856; £32,361 in 1857, and 35,634 in 1858. The amount of each year's revenue, from 1842 to 1858, was:—

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	14,256	8	10	1851	21,386	8	10
1843	14,310	2	6	1852	22,511	5	9
1844	12,675	14	4	1853	18,729	13	4
1845	14,040	15	8	1854	23,113	10	2
1846	16,909	1	8	1855	23,822	12	0
1847	17,405	9	0	1856	30,531	18	8
1848	13,434	19	9	1857	32,361	6	9
1849	15,009	5	0	1858	35,634	13	8
1850	17,098	15	2				

The yearly value of the exports of the United Kingdom, to all the countries on the shores of the Mediterranean, was upwards of £12,000,000 per annum, (£12,452,414) in 1857; and the value of the imports was upwards of £15,000,000 (£15,892,674). This included the silk from China, brought by way of Egypt.

BRITISH NORTH AMERICA AND NEWFOUNDLAND.

The trade with British North America, from all the ports of the United Kingdom, gave employment to 1,137,553 tons of shipping inward, and 641,186 outward, in the year 1857. Of this quantity, 213,166 entered the port of Liverpool, and 311,306 cleared from it.

The aggregate value of the imports from the British North American colonies, into England, in 1857, was £6,309,120, and that of the exports, £4,618,410.

The dock revenue, from the trade with British America and Newfoundland, was £24,085 in 1842, and £34,335 in 1858. The smallest amount which this trade produced in any year, in the interval between those years, was £15,282 in 1843. The revenue of the last three years was £20,861 in 1856; £40,730 in 1857; £34,353 in 1858. The return for each year of the series was as follows:—

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	24,085	1	10	1851	26,651	17	6
1843	15,282	5	6	1852	28,077	0	10
1844	22,158	6	10	1853	23,432	4	10
1845	28,238	17	8	1854	32,609	10	8
1846	33,096	12	6	1855	31,514	7	10
1847	37,818	9	9	1856	30,861	1	0
1848	25,422	13	10	1857	40,737	8	8
1849	28,538	16	8	1858	34,353	3	11
1850	38,615	15	9				

THE CONTINENT OF EUROPE.

The aggregate yearly value of the imports into the United Kingdom, from the countries on the shores of the Atlantic, including Germany, Holland, Belgium, France,

Spain, and Portugal, amounted, according to the last complete account, to £34,688,657. The value of the exports to those countries from the United Kingdom was, of British products, £29,110,418; of foreign, £14,660,520; total, £43,770,938.

The trade with the ports from the Mediterranean to the Baltic, produced to the dock estate £7,550 in 1842, and £17,629 in 1858. The smallest amount in the interval was £6,086, in 1843. The amounts of 1856, 1857, 1858, were £16,342 in the first of those years, £15,096 in the second, and £17,629 in the third. The following was the amount during the whole of the period:

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	7,550	0	8	1851	14,891	12	2
1843	6,086	19	4	1852	13,655	17	5
1844	6,324	18	1	1853	11,881	17	6
1845	6,691	10	11	1854	13,554	14	4
1846	8,352	4	8	1855	12,542	5	8
1847	10,208	10	2	1856	16,342	17	2
1848	8,153	16	6	1857	15,096	14	4
1849	8,774	14	2	1858	17,629	9	3
1850	10,189	12	9				

THE WEST INDIES AND THE GULF OF MEXICO.

The value of the imports into the United Kingdom from the British West Indies in 1857 was £5,223,634; from the foreign West Indies £3,471,333. The value of the exports to the British West Indies was £1,830,413 of British produce, and £204,403 foreign; and to the foreign West Indies £1,865,667 of British produce, and £51,522 of foreign. The value of the imports from Mexico, Central America, New Granada, and Venezuela was £1,161.663, and that of the exports to those countries £1,893,233.

The trade with the West Indies and the Gulf of Mexico contributed £9,338 to the dock revenue in 1842, and £17,124 in 1858. The lowest year of the series was 1853, when the amount was £10,104. The amount in each of the last three years was as follows:—In the year 1856, £13,141 ; in the year 1857, £15,269 ; and in the year 1858, £17,124. The following is the amount of each year:

Year	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	9,338	5	3	1851	12,295	4	8
1843	11,933	12	3	1852	11,368	15	10
1844	12,227	0	7	1853	10,104	1	0
1845	12,058	16	1	1854	10,874	6	8
1846	11,334	17	10	1855	12,850	12	3
1847	13,134	15	2	1856	13,141	13	6
1848	10,543	15	2	1857	15,269	19	2
1849	11,687	18	10	1858	17,124	11	9
1850	12,059	4	4				

BRAZIL AND THE RIVER PLATE.

The value of the total imports from Brazil into the United Kingdom in 1857 was £3,502,324; of the exports thereto, £5,541,710 of British produce, and £220,972 of foreign. The value of the imports from Uruguay was £742,769, and from Buenos Ayres £1,513,558 ; whilst the value of the exports to the former was £515,902 of British and £17,064 of foreign produce, and to the latter, £1,287,006 of British, and £55,413 of foreign.

The trade of Brazil and the River Plate produced the sum of £7,681, to the dock estate, in 1842, and £13,974 in 1858. In 1855 the trade produced only £6,167. During the last three years it produced as follows:—£14,145 in 1856 ; £13,974 in 1857 ; and £13,855 in 1858.

The following is the return from 1842 to 1858:

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	7,681	13	2	1851	8,851	0	0
1843	7,567	18	10	1852	9,069	16	3
1844	8,017	11	2	1853	8,443	13	9
1845	7,727	2	6	1854	9,150	7	8
1846	7,069	12	4	1855	10,204	7	3
1847	7,746	13	3	1856	12,145	5	6
1848	6,167	7	9	1857	13,974	2	8
1849	9,248	6	9	1858	13,855	3	6
1850	8,889	9	10				

THE WEST COAST OF AMERICA.

The total value of the imports from Chili was £193,268; from Peru, £4,412,599; from Bolivia, £32,418; and from Ecuador, £62,037: total in 1857, £4,700,322. The value of the exports to Chili was £1,520,678 of British, and £48,175 foreign; to Peru, £1,171,864 British, and £28,555 foreign; and to Ecuador £23,731 of British, and £438 foreign produce. This trade paid to the docks only £3,100 14s. 4d. in 1842, and £11,128 19s. 2d. in 1858. It produced the following amounts in the three last years:—£9,026 17s. 7d. in 1856; £8,241 18s. 10d. in 1857; and £11,128 19s. 2d. in 1858. The yearly return was as follows:

Year.	Amount.			Year.	Amount.		
	£	s.	D.		£	s.	D.
1842	3,100	14	4	1851	8,206	14	1
1843	3,627	10	11	1852	8,339	8	11
1844	3.934	71	2	1853	4,917	9	2
1845	4,014	10	11	1854	5,925	4	11
1846	3,018	15	8	1855	7,489	15	10
1847	4,195	17	2	1856	9,026	15	17
1848	2,939	4	0	1857	8,241	18	10
1849	3,012	4	0	1858	11,128	19	2
1850	4,198	1	8				

THE WEST COAST OF AFRICA.

The value of the imports from the West Coast of Africa in 1857 was £1,822,162 ; of the exports to, £766,517 of British, and £251,058 of foreign produce. The greater part of this trade is in Liverpool.

In 1842 the trade with the West Coast of Africa produced to the dock revenue the sum of only £3,480 ; in 1858, £7,258. In 1850 it was £3,313 10s. 3d. ; in the three last years it was as follows :—£5,550 in 1855; £6,595 in 1856 ; and £7,258 in 1858 :

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	2,812	6	8	1851	5,035	12	10
1843	3,480	8	3	1852	4,470	17	3
1844	3,941	2	10	1853	3,499	3	9
1845	9,281	10	6	1854	4,931	12	8
1846	5,096	0	9	1855	4,837	4	8
1847	3,717	9	4	1856	5,550	16	3
1848	3,746	3	9	1857	6,595	13	1
1849	3,273	12	6	1858	7,258	1	1
1850	3,113	10	3				

AUSTRALIA AND NEW ZEALAND.

The value of the imports from the Australian colonies into the United Kingdom in 1857 (exclusive of gold) was as follows :—New South Wales, £2,035,386 ; Victoria, £2,472,470 ; South Australia, £653,180 ; West Australia, £43,927 ; Tasmania, £563,113 ; New Zealand, £137,220, making the total imports into the United Kingdom from these colonies £5,905,296. The exports were :—To New South Wales, £3,130,709 British, and £465,886 foreign produce ; Victoria, £6,649,286 British, and £861,824

foreign; South Australia, £913,117 British, and £75,493 foreign; West Australia, £65,740 British, and £9,887 foreign; Tasmania, £509,242 British, and £85,737 foreign; and New Zealand, £364,634 British, and £43,774 foreign.

The trade with Liverpool has increased twelve-fold since 1842. In that year it produced only £504, and was as low as £242, in the interval. In the last three years it produced as follows:—£5,929 in 1856; £7,091 in 1857; and £6,144 in 1858. The yearly return was as follows:

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	504	19	7	1851	654	12	4
1843	428	7	4	1852	1,084	15	8
1844	242	15	5	1953	4,472	3	11
1845	747	5	1	1854	4,437	4	8
1846	612	11	7	1855	4.964	8	1
1847	414	2	3	1856	5,929	19	10
1848	325	19	3	1857	7,091	6	4
1849	387	1	1	1858	6,144	19	5
1850	438	8	6				

THE COUNTRIES ON THE BALTIC.

The aggregate amount of the trade of the United Kingdom with the Baltic is very large. The imports in 1857, were £20,568,795, the exports £6,529,300. This trade, however, was in a somewhat exceptional state, owing to the recent close of the war with Russia; but under ordinary circumstances the trade with the Baltic is large, though the share of Liverpool is less than that of London and Hull.

The Baltic trade, in 1842, produced £7,398 10s. 7d.; in 1858, £6,329 18s. 1d. Its lowest point (in time of

peace) between those years was in 1848, when it produced £5,466 14s. 10d.; its largest was in1854, when it produced £9,456 2s. 7d.:

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	7,398	10	7	1851	7,480	18	11
1843	6,992	11	0	1852	7,678	0	4
1844	7,499	1	0	1853	5,535	6	9
1845	7,890	18	5	1854	9,456	2	7
1846	7,871	5	4	1855	3,205	4	10
1847	6,859	3	2	1856	4,334	14	11
1848	5,466	14	10	1857	5,528	17	3
1849	7,227	18	1	1858	6,329	18	1
1850	7,563	9	9				

THE COASTING TRADE.

The coasting trade, in 1842, produced a revenue to the docks of £17,456 12s. 8d., and in 1858 of £28,671 6s. The smallest amount in any one year was in 1843, when it amounted to £18,899 18s. 10d.; the largest was in 1857, when it amounted to £30,194 7s. 7d.

Year.	Amount.			Year.	Amount.		
	£	s.	d.		£	s.	d.
1842	17,456	12	8	1851	23,942	6	9
1843	18,899	18	10	1852	26,050	0	1
1844	19,976	9	10	1853	24,686	17	5
1845	21,172	16	6	1854	25,693	9	7
1846	21,756	18	8	1855	26,205	19	9
1847	23,390	13	5	1856	26,294	1	7
1848	23,198	2	7	1857	30,194	1	7
1849	24,407	4	9	1858	28,671	6	0
1850	26,248	9	1				

Such are the great sources from which the revenue of the dock estate is derived, and it will be seen that there is not one of them which does not bear the most indisputable evidence of permanent and even rapid improvement. The

only apparent exception is in the trade with the Baltic, and that arises from the commercial difficulties produced in that trade, by the war with Russia; those difficulties have passed away, with the war itself, and their disappearance removes the single exception to the progress of the dock revenue, in every one of the great divisions of trade carried on in the port of Liverpool.

The above twelve divisions of foreign, colonial, and coasting trade, include the whole commerce of Liverpool, and afford the means of judging of the progress of the trade with each country, for a period of seventeen years. We do not possess the means of carrying this comparison further back, in so complete a form; but that is not material, the period of time included in these returns being sufficient for all useful purposes. On comparing the amounts which the Dock Trust of Liverpool received from the dues, in these various trades, in the series of years beginning in 1851, with the amounts received in the series commencing in 1842, it will be found that the increase is very great. This is especially the case in the trade with the countries peopled or governed by the Anglo-Saxon race —that is, with the United States, India, British North America, and Australia, and even with the West Indies, in spite of enormous difficulties arising from an insufficient supply of labour, and the competition not only of slavery, but of the slave-trade. As far as the trade with those countries is concerned, it would be difficult, if not impossible, to point out any cause which is at all likely to check its progress. The trade with Europe can only be diminished by a general war, the risk of which is much diminished by the deep interest which all the nations of the continent, and

none less than France, have in the continued progress of commerce and industry, which are now enriching them all, in proportion to the freedom with which they are allowed to expand. The condition of some of the republics which were formerly colonies of Spain, is still precarious, from political and personal strife; but they are all improving in that respect, with the single exception of Mexico, which is falling to pieces, but only to be reorganized by more vigorous hands and abler heads. The Brazilian Empire is steadily advancing in prosperity, although it has had the wisdom and the virtue to abandon that profitable iniquity, the African slave trade; and on the the coast of Africa a trade is springing up, in many valuable native commodities, especially in palm oil, which will become the means of rendering that country prosperous itself and useful to the world. Looking at the position which Liverpool holds, as one of the principal gates of communication between the United Kingdom and the rest of the world, we cannot see any reason why the next seventeen years should not show as great an increase in the commerce of the port, as is shown by the last seventeen years, whose progress is indicated in the preceding tables.

THE ARTICLES IMPORTED INTO, AND EXPORTED FROM, THE PORT OF LIVERPOOL.

The aggregate value of the imports and exports of Liverpool, as already stated, is upwards of £100,000,000 per annum. Before speaking somewhat more in detail of a few of the principal articles, we give the last complete and official list of the whole.

The imports into Liverpool, in 1857, consisted of the following articles, with the quantities of each stated in the table:

IMPORTS INTO THE PORT OF LIVERPOOL FROM ABROAD.

Animals, living:		
Oxen, bulls, and cows	number	234
Sheep and lambs	„	—
Bones (except whalefins)	tons	14,748
Cocoa	lbs.	1,006,809
Coffee	„	7,788,523
Corn:		
Wheat	qrs.	766,751
Barley	„	52,091
Oats	„	16,190
Peas	„	19,259
Beans	„	80,909
Indian corn or maize	„	473,580
Wheat meal and flour	cwts.	1,134,520
Cotton, raw	„	8,078,042
Cotton manufactures, not made up	value £	13,239
Dyes and dyeing stuffs:		
Cochineal	cwts.	665
Indigo	„	2,933
Madder and madder roots	„	309,735
Flax:		
Dressed and undressed	„	11,305
Tow or codilla of flax	„	9,670
Fruits:		
Currants	„	153,344
Lemons and oranges	bushels	249,285
Raisins	cwts.	74,941
Guano	tons	66,554
Hemp	cwts.	175,708
Jute and other vegetable substances of the nature of undressed hemp	„	443,350
Hides, untanned:		
Dry	„	51,518
Wet	„	229,117
Tanned, curried, or dressed, (except Russian hides)	lbs.	1,448,311
Mahogany	tons	13,484
Metals:		
Copper ore and regulus	„	22,663
Copper, unwrought and part wrought	„	3,472
Iron in bars, unwrought	„	973
Spelter, unwrought and rolled	„	1,326
Tin, unwrought	cwts.	6,367

Oil :		
Train, blubber, and spermaceti	tuns	5,534
Palm	cwts.	597,398
Cocoa nut	„	12,539
Olive	tuns	7,935
Seed oil, of all kinds	„	1,388
Oilseed cakes	tons	5,831
Provisions :		
Bacon and hams	cwts.	251,548
Beef, salted	„	68,201
Pork, do.	„	24,820
Butter	„	3,149
Cheese	„	31,109
Eggs	cubic feet	1,348
Lard	cwts.	150,893
Rags, and other materials, for making paper	tons	342
Rice, not in the husk	cwts.	1,734,449
Saltpetre and cubic nitre	„	363,893
Seeds :		
Clover	„	26,508
Flaxseed and linseed	qrs.	106,663
Rapeseed	„	47,536
Silk, raw	lbs.	346,379
„ thrown	„	10,677
Silk manufactures of Europe :		
Broad stuffs	„	766
Ribbons	„	571
Silk manufactures of India :		
Bandannas, corahs, choppas, tussore cloths, romals, and taffaties	pieces	2,197
Spices :		
Pepper	lbs.	821,481
Pimento	cwts.	4,465
Spirits :		
Rum	gallons	1,362,552
Brandy	„	320,421
Geneva	„	50,480
Sugar, unrefined :		
1st quality (equal to white clayed)	cwts.	20,143
2nd quality (not equal to white, but equal to brown clayed)	„	535,578
3rd quality (not equal to brown clayed)	„	1,121,208
Total of sugar, unrefined	„	1,676,929
„ refined, and sugar candy	„	89,423
„ molasses	„	375,768
Tallow	„	192,778
Tea	lbs.	8,439,711
Tobacco :		
Stemmed	„	6,912,451
Unstemmed	„	12,649,554
Manufactured, cigars, and snuff	„	432,839

Wine :		
Imported from British possessions	gallons	50,957
,, foreign countries	,,	1,056,442
Total of Wine	,,	1,107,399
Wood and Timber :		
Not sawn or split, or otherwise dressed, except hewn.		
Of British possessions	loads	144,051
Foreign	,,	43,513
Total not sawn or split	,,	187,564
Deals, battens, boards, &c., sawn or split.		
Of British possessions	loads	204,955
Foreign	,,	18,222
Total sawn or split	,,	223,177
Staves	loads	21,823
Wool :		
Sheep and lambs'	lbs.	41,247,359
Alpaca and Llama	,,	2,126,686
Woollen manufactures, not made up	value £	3,056

On examining the above list of the articles introduced into the port of Liverpool, it will be found that they are from seventy to eighty in number, independent of a great variety of smaller articles, which are not enumerated. By far the most important of these articles are the raw materials of the principal manufactures carried on in Lancashire, Cheshire, and Yorkshire; next in importance are grain, flour, provisions, and a great variety of articles of food; and, third, are the various kinds of timber and wood used in the construction of houses, warehouses, and ships. The aggregate value of all these articles is between £40,000,000 and £50,000,000. As nearly all the articles imported, in the form of raw materials, are afterwards exported, in the form of manufactured goods, it will be more convenient to give a list of the exports from Liverpool, before noticing a few of the more important articles in detail.

The following is a list of the British products exported from Liverpool in the year 1857, with their values:

Apparel and slops	£484,919
Beer and ale	250,856
Butter	366,931
Candles, stearine	44,653
Cheese	47,203
Coals, cinders, and culm	302,761
Cotton manufactures:	
Calicoes, cambrics, and muslins, fustians, and mixed stuffs	20,455,190
All other kinds	887,891
Cotton yarn	2,049,442
Earthenware and porcelain	1,032,590
Fish, herrings	4,115
Glass of all kinds	191,631
Haberdashery and millinery	2,128,715
Hardware and cutlery	2,542,576
Leather, tanned, unwrought	80,020
Wrought	574,446
Saddlery and harness	118,503
Linen manufactures:	
Cloths of all kinds, and cambrics	2,840,991
All other kinds	183,626
Linen yarn	366,868
Machinery:—Steam engines and other sorts	1,096,757
Metals:	
Iron—pig, bar, wire, and cast	2,576,095
Wrought of all kinds	1,861,008
Steel, unwrought	469,508
Copper, unwrought	198,844
Part wrought, and wrought	948,135
Lead—Ore, pig, rolled, sheet, and shot	129,831
Tin, unwrought and in plates	1,298,951
Oil, seed	48,227
Painters' colours	84,303
Salt	283,536
Silk manufactures	836,613
Thrown, twist, and yarn	23,500
Soap and soda	489,581
Spirits	70,203
Stationery	134,514
Sugar (British refined)	5,824
Wool, sheep and lambs'	56,457
Woollen and worsted manufactures:	
Woollens, worsted, and mixed stuffs	6,319,870
All other kinds	365,879
Woollen and worsted yarn, including yarn mixed with other materials	40,703
All other articles	2,881,430
Total declared real value	£55,173,756

The above lists of exports and imports show. that the greater part of the commerce of Liverpool is derived from imports of various raw materials of manufactures, and from the export of manufactured goods. Under the head of raw materials are included cotton, sheep, llama, and alpaca wool; flax, silk, hemp, and jute; hides, and a great variety of dyes, oils, and other articles of produce, used in the processes by which the raw materials are converted into those beautiful and useful fabrics, which the workshops of the United Kingdom supply to the whole world. We proceed to notice a few of the most prominent articles.

THE COTTON TRADE OF LIVERPOOL.

The commerce created by the importation of raw cotton and the exportation of cotton manufactures, is the greatest branch of commerce which now exists, or which ever existed in the British Empire. Five-sixths of this prodigious trade is carried on through the port of Liverpool, of which it forms the main support. The value of the cotton imported into the United Kingdom, in the last year of which we have an official return, was £29,288,827; and of this amount about £27,000,000 was the value of the cotton imported into Liverpool. To this must be added the value of the dye wares and other articles used in preparing cotton goods for use, amounting to not less than £4,000,000 more. The value of the cotton goods and yarn exported, in the same year, was £39,073,420, of which £23,392,523 passed through the port of Liverpool. Adding the value of the exports to that of the imports, we have a commerce

amounting to £72,362,247 a-year, produced by one article, of which upwards of £50,000,000 passes through Liverpool.

The growth of the cotton trade, during the last sixty years, is the greatest fact in the history of modern industry. In the first year of the present century, the quantity of cotton imported into, and manufactured in, the United Kingdom was rather more than 50,000,000 lbs.; in the year 1858 it was 1,025,000,000 lbs., being an increase of twenty-fold. What is of even more importance is, that the increase continues to the present time, in a ratio limited only by the production of the raw material.

Five countries, very distant from each other, join in supplying the great article of cotton, so essential to the commerce and manufactures of the United Kingdom. Of these countries, the two which supply cotton in much the greatest abundance, are those in which the capital, energy, and skill of the Anglo-American and Anglo-Indian race have been applied, with the greatest success, to tropical industry, namely, the United States of America, and British India. These are the only two countries which have hitherto shown themselves at all capable of meeting that prodigious demand for this article, which is created by the manufacturing energy of the British people, and the wants of the whole world. Of the 8,654,633 cwts. imported into this country, in 1857, for consumption or export, the quantity produced in the United States was 5,879,034 cwts.; in the British East Indies, 1,602,213 cwts.; in the Brazilian Empire, 267,061 cwts.; in Egypt, 219,038 cwts.; in the West Indies, 11,887 cwts. No other country, at the present time, supplies this country with any quantity of cotton which is deserving of notice.

It will be seen from the above figures that the United States supplied nearly three-fourths of the whole of the cotton imported, and British India much the larger portion of the other fourth. The reasons of this superiority are very obvious. In the United States there exists the greatest skill and intelligence in the cultivation of cotton, a sufficiency of capital, an inexhaustible supply of the finest land, a freehold and rent-free tenure of the land, a regular supply of labour, a climate in which heat and moisture are much more favourably blended, than in the climates of most other countries in which cotton is grown, an immense number of navigable rivers flowing down to the places of export, and a comparatively short and easy voyage to the ports of this country. The one drawback in the production of cotton in the United States is, that it is raised by slave labour instead of free labour, a circumstance which has a tendency to limit production beyond a certain point, and to discourage improvements. British India is superior to the United States, as a cotton-growing country, in the abundance of labour, and that is a circumstance of so much importance as to compensate for many disadvantages. Some of those disadvantages arise from natural causes, whilst others originate in political and economical mismanagement. The most serious natural difficulty in India is that caused by the excessive dryness of the climate ; yet, even that might be overcome, to a certain extent, by the introduction of irrigation. There is also some disadvantage from the greater length of the voyage to Europe. The difficulties arising from political and economical causes may be very much diminished, if not altogether overcome, by the introduction of a better system of tenures for land, and the

formation of railways, through the cotton-producing districts. There is a wide field for improvement in these respects, and the progress of the production of cotton in India, during the last dozen years, has been such as to encourage hopes of still greater success.

On examining the progress of production during the last thirty years, in the five countries in which cotton is produced, we find the following results:

In the year 1828, the quantity of American cotton imported into the United Kingdom, was 444,390 bales; the quantity of East Indian, 84,855 bales; the quantity of Brazilian, 167,362 bales; the quantity of Egyptian, 32,889 bales, and the quantity of West Indian, 20,056 bales, making the total number of bales of cotton imported in 1828, 749,552.

Passing on for a period of ten years, we find that the quantity of American cotton imported into the United Kingdom, in the year 1838, had increased to 1,124,800 bales, and that of East Indian to 107,200 bales; whilst the quantity of Brazilian cotton had decreased to 137,500 bales, and that of Egyptian to 29,700 bales. The supply of West Indian had increased to 29,400 bales. The total quantity in 1858 was thus 1,428,600 bales.

Passing on once more to the year 1848, we find that the import of American cotton had increased to 1,375,400, and that of East Indian to 227,500 bales, whilst the supply of Brazilian cotton had decreased to 100,200 bales, that of Egyptian to 29,000, and that of West Indian to 7,900 bales. The total import of 1848 was thus 1,740,000 bales.

Passing on, again, to the last year, 1858, we find that the import that year was the largest ever known, and con-

sisted of 1,863,300 bales American, 361,000 East Indian, 106,200 Egyptian, and 6,500 West Indian. The total import of 1858 was thus 2,442,600 bales.

The largest quantity of cotton ever imported from the United States, in one year, was that imported in the year 1858, namely, 1,863,300 bales; the largest imported from India was that of 1857, amounting to 680,500 bales; the largest imported from Brazil was that of 1830, amounting to 191,468 bales; and the largest imported from Egypt was that of 1856, amounting to 113,000 bales. The quantity of cotton produced in the West Indies has decreased from 103,511 bales, in 1809, to 6,500, in 1858.

The import of cotton into Great Britain in the year 1858, compared with 1857, showed an increase of 381,300 bales of American, and 29,700 Egyptian; and a decrease of 62,700 Brazilian, 319,500 East Indian, and 4,800 West Indian; making a total increase of 24,000 bales.

The average weekly consumption of Great Britain in 1858, was estimated, by Messrs. George Holt and Co., at 41,817 bales, of which 31,452 was American, 6,240 East Indian, 2,192 Brazilian, 1,729 Egyptian, and 224 West Indian.

Compared with the consumption of the preceeding year, these figures show an increase of 79,500,000 lbs. The total import of 1858 is estimated, by Messrs. George Holt and Co., at 1,025,000,569 lbs., being an increase on the preceding year (1857) of 49,398,000 lbs.

The total quantity of raw cotton imported into the United Kingdom, in the year 1857, was 8,654,633 cwts. Of this quantity 8,078,042 cwts. was imported into Liverpool.

Next in importance to cotton wool is the wool of the

sheep, the llama, and the alpaca. Thirty years ago Spain and Saxony were the principal countries from which sheep's wool was imported into this country, and at that time the commerce in wool was chiefly confined to London, Hull, and Bristol. Since that time, however, Australia has left these countries far behind, in the production of wool, and one of the consequences of that change has been to give the port of Liverpool a considerable share of that great trade. In the year 1857, the quantity of wool imported into the United Kingdom was 127,290,885 lbs., and of this 69,961,286 lbs. was imported into London, 41,247,359 lbs. into Liverpool, and 11,673,049 lbs. into Hull. In the same year the quantity of alpaca and llama wool imported into the United Kingdom was 2,359,013 lbs., of which 2,126,686 lbs. were imported into Liverpool, and 133,903 lbs. into London.

In two other raw materials, namely, flax and silk, Liverpool has only a small share, Hull being the principal port for the import of flax, and London and Southampton the principal ports for the import of silk. In the articles of hemp, jute, hides, and in the dyewoods used in manufactures, Liverpool has a very large share of the whole.

With regard to manufactured goods, it will be seen from the table of exports already given, that Liverpool possesses this trade far beyond any other port of the United Kingdom.

Next in importance, as articles of commerce, are the great articles of food, especially those of grain, flour, and provisions. Liverpool is now one of the most extensive corn markets in Europe, being especially suited for the corn trade of the United States, of British America, and

of Ireland, and having also an extensive trade in grain with France, Spain, the Mediterranean, and the Black Sea. The particulars of the imports of grain and flour will be found in the table given above. It is generally conceded that the corn trade of Liverpool is next in importance to the cotton trade.

The timber trade is also a trade of very great extent, and gives employment to a large amount of shipping. The particulars will be found in the tables of imports, and and in the account of the trade of the separate docks.

The articles known under the general name of produce are also of very great value. The particulars of each article will be found separately, in the accompanying tables.

Previous to the discovery of the gold diggings in Australia, there was no trade in the precious metals in the port of Liverpool, of any importance, but since then the imports of gold have become very large, and in the year 1858 amounted to £7,320,522.

LINES OF RAILWAY AND CANAL COMMUNICATION FROM THE RIVER MERSEY TO THE PRINCIPAL TOWNS AND DISTRICTS OF THE UNITED KINGDOM.

Having described the commerce of Liverpool, the sources whence it is derived, and the shipping by which it is carried on, it will be desirable to give a brief account of the great lines of railway and canal communication, which have their starting points and termini, in connection with the docks and with the harbour of the Mersey. The

most important of these lines were formed for the purpose of participating in the profits of the trade of the Mersey, and they have all, in their turn, tended to add greatly to that trade.

The lines of land and water communication, extending from the docks and harbour of the Mersey, to various parts of the United Kingdom, are twelve in number.

The first of the lines of railway which have one or more terminus in the port of Liverpool, is the London and North-western Railway, constructed, according to Mr. Lowe's return of last session, at a cost, in capital and loans, of £38,734,939. The next is the Great Western, not originally connected with the Mersey, but brought down to Birkenhead recently, at a prodigious cost in money and guarantees, and having cost, according to the same return, up to the 31st December, 1857, the sum of £27,797,150. The third is the Great Northern, which, like the Great Western, was not originally connected with Liverpool or the Mersey, but which has recently made its way to Garston and the Mersey, by the Manchester Sheffield and Lincolnshire, the Manchester South Junction and Altrincham, and the St. Helen's and Garston Lines. The cost of the Great Northern, to the 31st December, 1857, was £12,062,479; that of the Manchester Sheffield and Lincolnshire Line, £5,939,981; and that of the St. Helen's and Garston, £859,200—the capital of the Manchester South Junction and Altrincham being included in the Great Northern returns. Fourth, the Lancashire and Yorkshire, whose loans and capital, to the 31st December, 1857, amounted to £14,487,577. Fifth, the East Lancashire, whose capital and loans, to the same date, amounted to £4,237,833.

Sixth, the Liverpool and Southport Railway. And seventh, the Birkenhead Lancashire and Cheshire line, whose loans and capital, are stated in Mr. Lowe's return, at £3,150,000.

Nearly a hundred years before George Stephenson formed the Liverpool and Manchester Railway, Brindley, and his noble employer, the Duke of Bridgewater, with other engineers—of whom Thomas Steers, the former of the first and second Liverpool docks, was the ablest—had improved rivers and constructed canals, for the purpose of promoting the same line of communication. All these lines of navigation still exist, some independently, others in connection with different lines of railway.

The Bridgewater Canal, the noblest work of the genius of Brindley, is still an extensive and useful line of communication, maintaining an independent action, and having joined to it the Mersey and Irwell Navigation, constructed, by Steers, thirty years earlier. Both these lines are stated, in Mr. Lowe's returns, to be "private property;" and on that ground give no account of the capital expended upon them—which perhaps might be difficult, so long after the time when they were constructed. The Weaver Navigation, from the river Mersey to the Cheshire Salt Field, also maintains a separate existence, and does a very extensive business. The Sankey and Widness Canal has a very extensive trade, but is now united to the St. Helen's Railway. The Leeds and Liverpool Canal, with the Douglas navigation, forming one of the most extensive and useful lines of inland navigation in the United Kingdom, is now leased and worked by the Lancashire and Yorkshire Railway Company. The Trent and Mersey Canal is now united with the North Staffordshire Railway, whose capital

is given, in Mr. Lowe's return, at £3,996,372. And the Chester Canal, from Ellesmere Port on the Mersey, to the Severn, is merged in the Shropshire Union Railway and Canal Company, whose capital and loans, to the 31st December, 1857, amounted to £5,820,000.

The general effect of all these railways and canals is to give the port of Liverpool the easiest, quickest, and cheapest means of communication, not only with Lancashire, Cheshire, and Yorkshire, but with Staffordshire, Birmingham, and London, in one direction; with North Wales, Shrewsbury, and South Wales in another; with Kendal, Carlisle, Newcastle, Edinburgh, and Glasgow in a third; and with Lincolnshire and Nottinghamshire in a fourth.

The various lines of railway and canal above described, are connected with the docks of the Mersey at different points; and, besides the advantage which they derive from, and confer on, the general commerce of the port, they exercise a considerable influence, in promoting trade between the towns and districts from which they proceed, and the particular docks, near which they terminate.

Beginning at the north end of the docks, the group of railways and canals which enter and lead from the docks and port, into the interior, are the East Lancashire, and the Lancashire and Yorkshire Railways, (which have a common terminus,) and the Leeds and Liverpool Canal, which is leased by the latter company. These lines of communication leave the docks nearly by the line selected by the engineers of the Leeds and Liverpool Canal, (of whom the great Brindley was one,) for the first canal ever formed from the docks of Liverpool, to the interior of Lancashire

and Yorkshire; which was also the line by which George Stephenson proposed, in his original bill of 1824, to have taken the Liverpool and Manchester Railway out of Liverpool. This is at once the line of the easiest gradients from and to Liverpool, as it winds round the hills on which Liverpool stands, instead of going over them; and is also the best line of communication from Liverpool to the great coal fields of Lancashire and Yorkshire, and to the numerous and populous towns, which have grown up, on these inexhaustible stores of mechanical power and national wealth. These two lines of railway, with the Leeds and Liverpool Canal, form the principal means of communication between Liverpool and the following places:—Preston (69,542 inhabitants, at the last census in 1851); Lancaster (26,168); Kendal (11,829); Carlisle (26,310); Newcastle-on-Tyne (87,784); the whole of Scotland (nearly 3,000,000); Blackburn (46,536); Burnley (20,828); Wigan (31,941); Bolton (61,171); Bury (31,262); Rochdale (29,195); Halifax (33,582); Bradford (102,778); Leeds (172,270); Wakefield (22,057); and Hull (84,690); together with the almost innumerable populous villages, extending nearly all the way from Liverpool to Leeds along these lines of communication.

It is owing to the extent and value of the trade with these districts that the northern docks, none of which have been in existence more than ten years, last year produced the following large amounts of revenue:—The Huskisson Dock, £30,209; the Sandon Dock, £3,831 (and a considerable part of the £21,922 1s. from the graving docks); the Wellington Dock, £17,411; the Bramley-Moore Dock, £42,076, (being the largest amount received that year in

any dock in the port of Liverpool); the Nelson Dock, £17,081; the Salisbury Dock, £1,903; the Collingwood Dock, £5,296; and the Stanley Dock, £28,752; making a total of £146,559, or upwards of one-third of the whole dock revenue in 1858, from tonnage, lights, and merchandise. A considerable portion of the trade and of the passenger traffic of the Clarence Dock, and of all the docks as far south as the Prince's, also flows along the northern lines, owing to the advantages afforded by the Leeds and Liverpool Canal, and the Tithebarn-street Railway Station, which leads directly up to the Exchange.

The London and North-western Railway communicates with the Liverpool Docks by two goods stations; one of these, at the south, adjoining the Wapping, the King's, and the Queen's Docks, the second, at the north, adjoining the Victoria, the Waterloo, and the Trafalgar Docks. The London and North-western Railway is also to have a station near the centre of the Birkenhead Docks, on a piece of land containing 40,000 square yards, situated on the South Reserve, between the large Low-water Basin and the Morpeth and Egerton Docks.

The north goods station of the London and North-western Railway, is the principal outlet and inlet of the trade of the Clarence, the Trafalgar, the Victoria, and the Waterloo, the Prince's, and perhaps of the George's Docks.

The south or Wapping Station of the London and North-western Line, with the Bridgewater and Mersey and Irwell navigations, are the principal outlets and inlets of the trade of the Wapping, King's, Queen's, Salthouse, and Albert Docks.

These are the great lines of communication with Man-

chester and Salford, which had between them upwards of 400,000 inhabitants, in 1851, (Manchester 316,213; Salford 85,108), and which have at least half a million now; with Oldham (72,357); Huddersfield (30,880); the salt districts of Cheshire, Staffordshire (North and South), Birmingham (232,841); and London (2,500,000) inhabitants.

The Liverpool termini of the Trent and Mersey Canal, now united with the North Staffordshire Railway; and of the Mersey and Severn, or Chester and Ellesmere Canal, now united with the Shropshire Railway, are also in connection with this part of the docks.

The central portions of the Liverpool docks, extending from Clarence Dock to Queen's Dock, and producing amongst them a revenue of nearly £200,000 a-year, are kept in a constant state of activity by the trade with Manchester, and the other flourishing towns in the vallies of the Mersey and the Irwell. The amount of revenue yielded to the various railway and canal companies which have lines of communication between Liverpool and Manchester, by the traffic between those great seats of manufacturing industry and commercial enterprise, is said to be from £500,000 to £600,000 per annum. This magnificent revenue, with the not less splendid revenue arising from the intercourse between Lancashire and London, through the midst of the densely crowded and wealthy population of Staffordshire and Birmingham, are the prizes for which the London and North Western, the Great Northern, the Great Western, and their auxiliary lines have been so long and so eagerly contending, but which they now propose to divide amongst themselves in certain settled proportions.

The Great Northern Railway approached the Mersey, as

the ally of the Manchester, Sheffield, and Lincolnshire, the Manchester and Altringham South Junction, and the St. Helens and Garston Railways, at Garston, about four miles above Liverpool.

The St. Helens and Garston Railway and Canal Company has four points of connection with the Mersey, two for the purposes of its canals, and two for the purposes of its railway. The first of its water communications is near Warrington, at Sankey Bridges, where its original line of canal, to the neighbourhood of St. Helens, commenced; the second is at Widness, nearly opposite to Runcorn, where a more modern line of canal joins the one first constructed. At Widness, the St. Helens Company have constructed a dock, covering an acre of ground, with a quay space of 280 yards frontage, for railway purposes. At Garston they have constructed a much larger dock, for the use of sea-going ships.

The Garston Dock is entered by dock gates 50 feet wide, and the entrance is sunk 6 feet below the datum of the Old Dock sill. It covers $6\frac{1}{4}$ acres, its quays have a lineal front of 900 yards, and they are 100 feet deep. The Garston Dock will admit vessels of 1,500 to 1,600 tons burden; and it is fitted up with coal drops, each of which will ship coal at the rate of 100 tons per hour.

But the St. Helens and Garston line has also sought parliamentary powers to extend its line from Garston into Liverpool, and to the edge of the Liverpool docks. The point at which it proposed to form its station for goods, was near the Brunswick, the Toxteth, and the Harrington Docks, to all which docks and their trade, as well as to the south part of Liverpool, and to the populous towns and districts of St. Helens, Runcorn, and Warrington, the

proposed extension of the Garston line would be a great convenience. It would also form another line of communication, from the Liverpool docks to Manchester, and beyond Manchester to Stockport, Sheffield, Nottingham, Lincoln and Grimsby.

The Birkenhead, Lancashire, and Cheshire Junction, and the Great Western Railways, already furnish convenient lines of communication from the river Mersey, at the Birkenhead docks, to Manchester, Birmingham, London, and Southampton, and to the whole range of country, lying to the west of a line, drawn from Birkenhead, to Birmingham, Oxford, Reading, and Southampton — a country abounding in mineral and agricultural wealth. The arrangement of last session will also give the London and North-western Company a strong interest in developing the trade from the Birkenhead docks, to all parts of its extensive lines of communication.

The Great Western has at present a goods station at the Morpeth Dock, but it is to have a much larger and more commodious one, situated on a portion of the land known as the South Reserve. Like the station of the London and North-western Railway Company, on the same plot of ground, it will contain 40,000 square yards of land. The Birkenhead, Lancashire, and Cheshire Railway is also to have a station on the South Reserve.

The Great Western Railway Company, after having expended about £3,500,000 on what are called the Shrewsbury lines, which are really lines to Birkenhead, and having spent several millions more in reaching the point where the Shrewsbury lines commence, is not likely to omit any means of rendering these lines profitable. The return

for that great outlay must be looked for from Birkenhead, and the efforts to secure that return will be advantageous to the commerce of the Mersey, whether it should prove profitable or unprofitable to the company.

THE WAREHOUSES OF LIVERPOOL.

In order to render efficient the great works above described, it was necessary to erect, as near to them as possible, extensive stacks of warehouses, to receive the enormous amounts of produce brought into the port, by the four millions and a half of tons of shipping which enter it every year.

The warehouses of Liverpool are constructed with a special regard to security against fire. This is rendered necessary by the immense quantities of cotton, oil, and other inflammable articles introduced into the port.

As relates to security against fire, the Liverpool warehouses are divided into three classes—1st, fire-proof; 2nd, externally fire-proof; and 3rd, uncertified warehouses.

Fire-proof warehouses are constructed altogether of bricks and iron, and have no wood work in them.

Externally fire-proof are constructed internally of wood, but externally of bricks, and partly of iron, and generally are proof against ignition from any building in contiguity.

Uncertified warehouses are such as were erected prior to the year 1843, when the Liverpool Warehouse Act passed, and are of bricks and wood, being neither internally nor externally fire-proof. About one-fourth of the Liverpool warehouses are bonded warehouses, and are licensed by the

Crown, for the storage of goods, on which the duties are unpaid, the occupiers of these warehouses giving security to the Board of Customs. These warehouses, both free and bonded, are occupied by merchants and middle men, who are called warehouse keepers.

Where the occupier employs his own men, the warehouses are said to be under exclusive management, and the buildings, and property in them, are insured from fire at a lower rate; but, generally, this is not the case. The occupier, in some instances, lets rooms in the warehouses, giving the sub-tenant the key; and in others, which is more frequently the practice, the warehouse keeper has the custody of the goods, but the merchant employs his own men.

The dock warehouses are all upon the verge of docks, namely, the Albert, Stanley, and Wapping, and are under exclusive management. The buildings are fire-proof.

There are some warehouses near the dock quays, but some of them are at a short distance, and the value of such warehouses is in some measure regulated by their proximity or otherwise to the docks. The warehouses are rated for the poor at £146,352, and their gross annual value is supposed to be £162,615, representing a capital of £3,000,000 to £4,000,000.

The warehouses or stores consist of warehouses, sheds, and vaults. The sheds are used generally as cotton stores, and the vaults for the deposit of liquids.

The Tobacco Warehouses are situated at the west side of the King's Dock, and are now rented by a lessee. A short time ago they were in the hands of the Customs. They have now no exclusive privileges, as any person can obtain the power of bonding tobacco, by fitting up ware-

houses according to certain rules. They are under exclusive management.

Timber is stored in sheds and yards, near to the docks, appropriated to that trade. They are generally in the hands of the importers.

The Birkenhead Dock Warehouses, now belonging to the Dock Board, are externally fire-proof.

THE PUBLIC INSTITUTIONS OF LIVERPOOL.

Having described the commerce and shipping of the port of Liverpool at the present time, we proceed to give a brief account of the public institutions, by means of which the affairs of the port, and those of the town, are administered. We shall speak, first of the representation of Liverpool in parliament.

REPRESENTATION OF LIVERPOOL.

Liverpool has returned two members to parliament from the year 1296, when Edward the First called on the burgesses of all the principal towns of the kingdom, to send members to his parliament, then about to assemble at Westminster. The constituency of Liverpool, previous to the Reform Bill, consisted of rather more than 4,000 voters; it now amounts to 18,779, which is the largest number of voters in any English city or town out of the metropolitan district. The constituency consists of householders and freemen, but in very different proportions. The number of freemen, in 1855-6 was 2,245; in 1856-7 it was 2,086;

in 1857-8 it was 1,956 ; and in 1858-9 it was only 1,791 : whilst, on the other hand, the number of householders was 15,602 in 1855-6 ; 16,228 in 1856-7 ; 16,899 in 1857-8 ; and 16,985 in 1858-9.

The borough of Liverpool is at present represented by Thomas Berry Horsfall and Joseph Christopher Ewart, Esqrs., both members of families long and honourably connected with the commerce of the port.

THE MERSEY DOCKS AND HARBOUR BOARD.

The most important of the local institutions of Liverpool is the Mersey Docks and Harbour Board, which has the control of the port, harbour, and docks of the river Mersey ; the Town Council, which governs the borough of Liverpool ; and the Select Vestry, which administers the the affairs of the parish.

The Mersey Docks and Harbour Board consists of twenty-eight members. Of these twenty-eight members, twenty-four are elected by dock ratepayers, paying £10 a year in dock dues, and are required themselves to pay £25 a year, in dues, to the dock estate ; and the other four are nominated by the Commissioners of Conservancy, for the river Mersey, who are the First Lord of the Admiralty, the Chancellor of the Duchy of Lancaster, and the Chief Commissioner of Woods and Forests, for the time being. The four names in the subjoined list thus marked * are those of the nominated members, the others are those of the elective members. The number of dock ratepayers on the register is 1,451 ; and none but dock ratepayers have now any voice in the administration of dock affairs.

THE MEMBERS OF THE MERSEY DOCKS AND HARBOUR BOARD (ELECTED JANUARY 1ST, 1859.)

CHARLES TURNER, Esq., Chairman

Anderson, Thomas Darnley, West Dingle, Dingle-lane, Toxteth Park, Merchant
Arnold, Samuel James, Sandfield Park, West Derby, Broker
* Bold, Thomas, Canning-street, Shipowner
Boult, Francis, Claughton, Cheshire, Merchant
Brocklebank, Ralph, Annesley, Aigburth, Merchant
* Bushell, Christopher, Hinderton, near Neston, Wine Merchant
Evans, Eyre, Shaw-street, Liverpool, Merchant
Farnworth, John, Much Woolton, near Liverpool, Timber Broker
Forwood, Thomas Brittain, Fairfield, West Derby, Merchant
Graves, Samuel Robert, The Grange, Wavertree, Merchant and Shipowner
Holme, James, Mount-pleasant, Liverpool, Gentleman
Hubback, Joseph, Ashfield-road, Aigburth, Merchant
Hutchison, Robert, Canning-street, Liverpool, Merchant
Inman, William, Harefield-house, near Upton, Cheshire, Steam-ship Agent
* Laird, John, Hamilton-square, ship-builder, Birkenhead
Langton, William, Abercromby-square, Liverpool, Merchant
* Littledale, Harold, Liscard-Hall, Cheshire, Broker
Lockett, John Hilton, Shaw-street, Liverpool, Merchant
MacIver, Charles, Abercromby-square, Liverpool, Steam-ship Owner
Mondel, Joseph, Church-road, Seaforth, Shipowner
Moss, William Miles, Ashfield, Walton Breck, Merchant
Rankin, Robert, Bromborough-hall, Bromborough, Cheshire, Merchant
Rounthwaite, John Kirby, Huskisson-street, Liverpool, Steam-packet Agent
Segar, Halsall, the younger, Claughton-park, Claughton, Cheshire, Corn Merchant
Shand, Francis, Fairfield-hall, West Derby, Merchant
Smith, James, Barkeley-house, Seaforth, Gentleman
Tobin, James Aspinall, Eastham, Cheshire, Merchant

For the more effectually carrying out the business of the trust, the Mersey Dock and Harbour Board has formed the following committees :

DEPARTMENTS AND COMMITTEES OF THE MERSEY DOCKS AND HARBOUR BOARD, 1859.

1st. WORKS—(consisting of 10 members)—Messrs. Brocklebank, Bold, Bushell, Evans, Laird, Rankin, Smith, Tobin, Holme, Shand, and Turner.—Meets every Saturday, at 12 o'clock.

2nd. WAREHOUSES — (7 members) — Messrs. Hubback, Arnold, Brocklebank, Evans, Smith, Segar, and Littledale.—Meets every Saturday, at the Albert Dock, at 1 o'clock.

3rd. MARINE—(6 members)—Messrs. Mondel, Inman, Lockett, Langton, Maciver, and Moss.—Meets every Tuesday, at 1 o'clock.

4th. DOCKS AND QUAYS—(9 members)—Messrs. Lockett, Graves, Langton, Hutchison, Rounthwaite, Smith, Maciver, Boult, and Forwood. Meets every Wednesday, at 12 o'clock.

5th. FINANCE—(6 members)—Messrs. Rankin, Anderson, Bushell, Hubback, Farnworth, and Littledale—Meets every Thursday at 12 o'clock.

6th. MASTER PORTERAGE—(6 members)—Messrs. Rounthwaite, Arnold, Inman, Hutchison, Segar, and Forwood.—Meets every Thursday, at half-past 12 o'clock.

7th. PARLIAMENTARY—(8 members)—Messrs. Shand, Bold, Brocklebank, Graves, Laird, Rankin, Tobin, and Holme.

8th. PILOTAGE.—12 members—eight members of the board, and the remaining four not members)—Members of the board, Messrs. Shand, Moss, Boult, Anderson, Farnworth, Inman, Mondel, and Bold; not members of the board, Messrs. Andrew Boyd, T. M. Blythe, W. T. Jacob, and George Kendall.—Meets every Monday, in the pilots' committee room, 2, Old Churchyard.

N.B.—The chairman of the board is, *ex officio*, a member of each committee.

OFFICERS OF THE MERSEY DOCKS AND HARBOUR BOARD.

Mr John North, Solicitor; Office, Dock-office
Mr Jesse Hartley } Engineers of the Docks; Office, south side
Mr John Bernard Hartley } Coburg Dock
Mr Daniel Mason, Secretary of the Committee
Mr G J Jefferson, Dock Treasurer
Lieut. M T Parks, R.N., Marine Surveyor; Office, Dock-office
Mr Wiliam Marrow, Receiver of Duties on Tonnage
Mr John Evans, Receiver of the Duties on Goods Inwards
Mr Joseph F Owen, Receiver of Duties on Goods Outwards
Mr Richard Jones, Receiver of the Duties at Runcorn
Mr R Cowan, Superintendent of Albert and Wapping Dock Warehouses
Mr W D Turner, Superintendent of Stanley Dock Warehouses
Mr Thomas Hodgson, Senior Harbour-master } Masters of the Graving
Mr John Garniss, Junior Harbour-master } Docks*

* Office, George's Dock Passage.

THE PORT, HARBOUR, AND DOCKS OF LIVERPOOL, AND THE RIVER MERSEY.

The public works which are under the management of the Mersey Docks and Harbour Board, include so great a variety of details, that it has been thought better to describe them separately. This is done in the second part of this work, so fully as to render any further particulars, with regard to the docks, harbour, and port unnecessary, in the first part of the work. We proceed, therefore, to trace the rise and progress of the dock revenues.

THE REVENUE AND ESTATE OF THE MERSEY DOCKS AND HARBOUR BOARD.

It appears from the balance sheet of the Mersey Docks and Harbour Board, published in the accounts of the Board, for the financial year ending June 24th, 1858, that the revenue of the Board that year amounted to the sum of £511,964 13s, 5d.; and their expenditure, to the sum of £449,886 16s. 3d., leaving a surplus of ordinary revenue, to be carried to capital account, of £62,077 17s. 2d. In the preceding year, 1857, the surplus of ordinary revenue, carried to capital account was £102,209 15s. 5d. It may be useful to trace the progress of the dock revenue for the last twenty years.

PROGRESS OF TONNAGE AND TONNAGE DUES DURING THE LAST TWENTY YEARS.

The first great item of revenue consists of dock and light dues on shipping, commonly known as tonnage dues.

Twenty years ago, in the year 1839, these dues were paid by 15,445 vessels, of the aggregate burden of 2,138,691 tons, and produced a revenue of £81,680; and last year they were paid by 21,352 vessels, of the burden of 4,441,943 tons, and produced a revenue of £183,637 10s. 10d. The following figures, taken from the tabular statement, entitled "Account of dock duties at the port of Liverpool, from the year 1752," given at the end of the yearly statement of the Accounts of the Mersey Docks and Harbour Board, show the progress of this, the principal source of dock revenue, in the port of Liverpool:

Year.	Vessels.	Tonnage.	Duties on Tonnage.		
			£	s.	d.
1839	15,445	2,158,691	81,680	8	5
1840	15,998	2,445,708	92,221	2	3
1841	16,108	2,425,461	91,755	10	4
1842	16,458	2,425,319	93,360	2	0
1843	16,606	2,445,278	96,445	11	7
1844	18,411	2,632,712	99,044	13	7
1845	20,521	3,016,531	118,046	8	8
1846	19,951	3,096,444	114,709	15	8
1847	20,889	3,351,539	127,982	14	1
1848	20,311	3,284,963	107,589	10	4
1849	20,733	3,639,146	122,073	2	0
1850	20,457	3,536,337	116,541	7	11
1851	21,071	3,737,666	128,026	0	7
1852	21,473	3,912,506	137,754	0	5
1853	20,490	3,889,981	140,619	19	1
1854	22,030	4,316,583	161,441	0	0
1855	20,024	4,096,160	148,586	14	5
1856	20,886	4,320,618	174,338	14	9
1857	22,032	4,645,362	197,821	2	11
1858	21,352	4,441,943	183,637	10	10

PROGRESS OF DUES ON GOODS INWARDS AND OUTWARDS DURING THE LAST TWENTY YEARS.

The second great source of revenue is the dues on goods inwards and outwards. This source of revenue produced,

in the year 1839, an amount of £74,854 13s. 1d., and last year, of £164,261 19s. 10d. The following table will show the progress of this great item of dock revenue, and also of the dues on tonnage and goods united:

Years.	Duties on Goods.			Total on Tonnage and Goods.		
	£	s.	d.	£	s.	d.
1839	74,874	13	1	156,555	1	6
1840	85,975	11	9	178,196	4	0
1841	83,750	18	1	175,506	8	5
1842	83,871	13	5	177,231	15	5
1843	91,840	10	6	188,286	2	1
1844	86,119	8	4	185,164	1	11
1845	105,200	15	9	223,247	4	5
1846	98,714	0	6	213,423	16	2
1847	116,453	0	6	244,435	14	7
1848	90,028	6	6	197,617	16	10
1849	102,151	17	0	224,224	19	0
1850	95,201	19	8	211,743	7	7
1851	107,501	5	7	235,527	6	2
1852	108,932	5	3	246,686	5	8
1853	116,082	6	6	256,702	5	7
1854	136,637	8	8	298,078	8	8
1855	113,075	17	11	261,661	12	4
1856	152,462	13	1	326,801	7	10
1857	176,474	5	1	374,295	8	0
1858	164,261	19	10	347,899	10	8

THE DOCK INCOME IN 1858.

The revenue yielded by the above two great sources of income, showed a decline in the financial year extending from June 25, 1857, to June 24, 1858, in comparison with the same twelve months of 1856 and 1857, but this decline was only temporary, and arose from the commercial panic of 1857. The revenue of the docks from tonnage and merchandise, in the year, from January to December, 1858, showed an increase, in comparison with the twelve months from January to December, 1857. The following are the com-

parative amounts of dues on tonnage and merchandise in those years:—Dues in 1858, £374,558 6s. 1d.; 1857, £373,987 9s. 2d.; increase in 1858, £570 16s. 11d.

OTHER SOURCES OF INCOME TO THE DOCKS.

Another considerable source of revenue is supplied by the graving dock rates and the graving block rates, from vessels under repair. Last year, the former of these, the graving docks, produced £21,922 1s. 0d., and the graving blocks, £2,004, 3s. 6d., making a total, for repairing purposes, of £22,926 4s. 6d. It is not necessary to follow this source of income more in detail. The shipping has doubled itself in twenty years, and the rates for repairs have increased in about the same proportion.

The next item of importance, the revenue from dock warehouses, is entirely new during the last twenty years, no dock warehouses having existed in 1839. Last year, the revenue from this source was as follows:—Albert Dock Warehouses, £20,000; Wapping Dock Warehouses, £5,000; Stanley Dock Warehouses, £8,500: total from dock warehouses, £33,500. Another considerable item of revenue, is cash received for rents of property, £20,291 3s. This is property purchased for dock purposes, but not yet applied to those purposes.

The item miscellaneous (the particulars of which are given at p. 4, in the accounts) produced last year the sum of £18,634 11s. 11d. The principal items are canal rates, (on the branch canal, which joins the Leeds and Liverpool to the Stanley Dock,) cranes for landing and shipping goods, weights and scales, weighing machines, and dock stages.

PROGRESS OF TOWN DUES REVENUE, NOW APPLIED TO DOCK AND HARBOUR PURPOSES.

In addition to these sources of revenue, the more important of which the dock estate has possessed, either from its commencement or for a long course of years, there is a new large source of income, which formerly belonged to the corporation of Liverpool, but which was transferred to the Mersey Docks and Harbour Board, on the 1st January, 1858, for the purposes of the latter trust. Only half a year's town dues had been received by the Docks and Harbour Board, at the time when its yearly account was published, as appears from the following item in the June accounts:—"Town Dues from 1st Jan., 1858, £62,411 18s. 1d;" but the amount of town dues for the year 1858 was £133,359 9s. 11d. The progress of the town dues revenue, during the last twenty years, will be seen from the following figures:

Years.	Town Dues.			Anchorage.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.
1837-8	62,731	16	3	734	12	3	63,466	8	6
1838-9	65,677	10	7	749	10	9	66,427	1	4
1839-40	68,733	8	4	771	5	0	69,504	13	4
1840-1	67,787	12	8	773	12	0	68,561	4	8
1841-2	66,241	18	0	758	15	3	67,000	13	3
1842-3	67,054	9	8	790	11	6	67,845	1	2
1843-4	75,492	1	10	864	16	0	76,356	17	10
1844-5	81,900	10	9	977	2	0	82,877	12	11
1845-6	84,624	5	7	923	6	5	85,547	12	0
1846-7	96,246	11	5	973	16	1	97,220	7	6
1847-8	89,523	1	4	893	15	5	90,416	16	9
1848-9	102,768	10	0	956	1	7	103,724	11	7
1849-50	94,838	12	8	937	19	5	95,776	12	1
1850-1	106,607	15	9	970	0	6	107,597	16	3
1851-2	104,327	11	2	922	19	8	105,250	10	10
1852-3	117,124	13	2	937	10	2	118,062	3	4
1853-4	127,790	3	2	992	13	11	128,782	17	1
1854-5	112,878	19	8	893	0	8	113,772	0	4
1855-6	134,821	14	7	941	15	5	135,763	10	0
1856-7	136,500	15	1	Included in T. Dues			136,500	15	1
1857-8	133,359	9	11				133,359	9	11

NEW REVENUE AND NEW OBLIGATIONS OF THE DOCK ESTATE.

The revenue of £133,359 from Town Dues, received by the Mersey Docks and Harbour Board, for the first time, in the year 1858, formerly belonged to the corporation of Liverpool, but, as already mentioned, was transferred to the dock trust, by the Act of 1857. The obligations imposed on the dock estate, by the same act, involved the following amounts of expenditure:—First, the payment of compensation or purchase money for the town dues, paid to the corporation, amounting to £1,500,000; second, the purchase of the Birkenhead Dock Estate, for the sum of £1,250,000; third, the payment yearly of certain sums for conservancy and other purposes, amounting in the whole to £3,000 to £4,000 a year; and fourth, the completing the Birkenhead dock works, on the plans of the Act of 1858, calculated according to the parliamentary estimate of 1858, to cost the sum of £1,750,000. The income of the Mersey Docks and Harbour Board, from whatever sources derived, is liable for the capital and interest expended in carrying out the Birkenhead works. As already mentioned, there was a surplus of income above expenditure in the financial year ending June the 24th, 1857, of £102,000, and a surplus income of £62,000 in the financial year ending the 24th of June, 1858. In the second half-year of 1858 the great sources of dock revenue entirely recovered from the check caused by the panic of November, 1857, and the income from these sources is now as great as it ever was, in the most prosperous year known in Liverpool.

THE MUNICIPAL GOVERNMENT OF LIVERPOOL.

The borough of Liverpool has had a Town Council, and has been a municipal corporation, for the last five centuries. Originally that body not only possessed the ordinary powers of local government, but included a commercial hanse and trading corporation, which acted at once as a joint-stock company for trading purposes, and as a council for the promotion and regulation of trade. During the last hundred and fifty years the Town Council has employed itself, amongst other things, in promoting the interests of the dock estate, which it originally founded, and afterwards governed, with great success, for a long course of years, raising it from nothing, to the position of one of the most prosperous and useful public estates that ever existed, or now exists, in England; but, by the Mersey Docks and Harbour Act, of 1857, the management of the dock estate was separated from the municipal government of the port, and placed in the hands of the Mersey Docks and Harbour Board, whose constitution has been already described. All the duties usually performed by municipal corporations are still vested in the corporation, and those are numerous and important, as may be supposed, involving, as they do, the municipal government of a population of nearly half a million of inhabitants.

THE TOWN COUNCIL AND CORPORATION.

The Town Council of Liverpool consists of sixty-four members, of whom sixteen are aldermen and forty-eight town councillors. The borough is divided into sixteen

wards, each having one alderman, and returning three members to the Town Council. The number of municipal voters, on the present register, is 14,744. The following is a list of the Town Council, as at present composed:

THE MAYOR, ALDERMEN, AND COMMON COUNCIL, IN 1859.

WILLIAM PRESTON, ESQ., Mayor.

No. 1, EVERTON AND KIRKDALE WARD.	YEARS TO SERVE
Alderman Thomas Chilton	4
John Johnson Stitt	1
Daniel Crosthwaite	2
T. D. Anderson	3
No. 2, SCOTLAND.	
Alderman William Bennett	4
John Woodruff	1
James Crellin	2
Richard Sheil	3
No. 3, VAUXHALL.	
Alderman William Preston	4
John Shimmin	1
Christopher James Corbally	2
Roger Haydock	3
No. 4, ST. PAUL'S.	
Alderman Thomas Bold	1
Oliver Holden	1
William Barton	2
John Clerk	3
No. 5, EXCHANGE.	
Alderman George H. Horsfall	4
Charles Turner	1
Thomas Littledale	2
James Tyrer	3
No. 6, CASTLE-STREET.	
Alderman Thomas Dover	4
James Steains	1
James Ryley	2
Thomas Avison	3
No. 7, ST. PETER'S.	
Alderman James Parker	1
James Holme	1
Charles T. Bowring	2
David Rae	3
No. 8, PITT-STREET.	
Alderman Thomas Robinson	4
W. P. Jeffreys	1
Samuel R. Graves	2
Thomas Ridley	3

No. 9, GREAT GEORGE WARD.	YEARS TO SERVE.
Alderman Joseph Cooper	1
Alexander Shand	1
Thomas Wagstaff	2
John Rogers	3
No. 10, RODNEY-STREET.	
Alderman J. H. Turner	4
J. A. Tobin	1
Charles Mozley	2
Thomas Bulley Job	3
No. 11, ABERCROMBY.	
Alderman R. C. Gardner	1
William Earle	1
Robert Hutchison	2
Robertson Gladstone	3
No. 12, LIME-STREET.	
Alderman J. B. Moore, M. P.	1
James Reddecliffe Jeffery	1
James Johnson	2
J. A. Picton	3
No. 13, ST. ANNE'S.	
Alderman Francis Shand	1
James Mellor	1
Joseph Kitchen	2
T. Llewelyn Hodson	3
No. 14, WEST DERBY.	
Alderman R. W. Houghton	4
F. A. Clint	1
R. M. Beckwith	2
John Aikin	3
No. 15. SOUTH TOXTETH.	
Alderman Thomas Toulmin	1
James Robertson	1
John Stewart	2
John Farnworth	3
No. 16, NORTH TOXTETH.	
Alderman Samuel Holme	1
William Hollis Anthony	1
Thomas Vernon	2
John Wakefield Cropper	3

THE COMMITTEES OF THE TOWN COUNCIL.

The Town Council meets once a month—on the first Wednesday of the month—for the discharge of the more general duties of municipal government, and as much oftener as its public duties may render desirable. One principal object of its monthly meetings is to confirm, modify, or disallow (as it may think right), the proceedings of the various committees which it appoints at the commencement of each municipal year, and to which it commits the working out, in detail, of the various departments of local government, subject to the revision and approval of the whole body in council assembled. The following is a list of the several departments into which the Town Council divides its municipal duties, and of the committees to which it entrusts the carrying out of each of them.

DEPARTMENTS AND COMMITTEES OF THE TOWN COUNCIL.

The Mayor is, *ex-officio*, a member of all committees.

1. FINANCE—John Stewart, Chairman ; Samuel Holme, Deputy-Chairman ; John Bramley-Moore, M.P., James Parker, John H Turner, Joseph Cooper, James Tyrer, Thomas Toulmin, Thomas Dover, James A. Tobin, William Earle, John Aikin, Francis Shand, James Steains, Richard Sheil, J Farnworth.—Meets every Friday, at 12 o'clock, at the Town Hall.

2. WATCH, LIGHTING, FIRE POLICE AND FIRE PREVENTION, HACKNEY CARRIAGE AND LICENSING, AND GAS—Francis A Clint, Chairman ; Jas Johnson, Deputy-Chairman ; Joseph Kitchen, R W Houghton, W P Jeffreys, T Bold, James Robertson, C J Corbally, John Farnworth, John Aikin, James Steains, J J Stitt, A. Shand, S R Graves, W Barton, J W Cropper, T B Job, Robert Hutchison, John Woodruff, T. L. Hodson.—Meets every Saturday, at 12 o'clock, at the Town Hall.

3. Law Courts—J Hayward Turner, Chairman ; John Stewart, Deputy-Chairman ; J Bramley-Moore, M.P., J A Picton, Jas Parker, Samuel Holme, William Earle, Thomas Avison, Thomas Littledale.—Meets every alternate Thursday, at the Town Hall, at 1 o'clock.

4. Markets—James Johnson, Chairman ; John Woodruff, Deputy-Chairman ; R M Beckwith, Thomas Chilton, Robertson Gladstone, Oliver Holden, Richard Sheil, C T Bowring, C J Corbally, John Shimmin, Thomas Ridley, Roger Haydock.—Meets every alternate Monday, at 11 o'clock, at the Town Hall.

5. Education—T D Anderson, Chairman ; R C Gardner, Deputy-Chairman ; Thomas Wagstaff, W P Jeffreys, Alexander Shand, James Robertson, S R Graves, Daniel Crosthwaite, J Farnworth, Joseph Kitchen, F A Clint, Robert Hutchinson, J W Cropper, Thos Ridley, J Clerk.—Meets every Friday previous to Council, at 1 o'clock, at the Town Hall.

6. Gaol—The Mayor, Chairman ; John Stewart, John H Turner, Robertson Gladstone, Samuel Holme, Charles Turner, Thomas D Anderson, James A Tobin, Oliver Holden, James Parker, George H Horsfall, R W Houghton, James R Jeffery, Thomas Vernon, Wm Earle, F Shand, Robert Hutchison, R Sheil, J Tyrer, T Chilton, T Rogers.—Meets the second Tuesday in every month, at 11 o'clock, at the Town Hall.

7. Town Hall Establishment—The Mayor, Chairman ; John Bramley-Moore, M.P., S Holme, John H Turner, J A Tobin, R C Gardner, G H Horsfall, Thomas Littledale, John Stewart, Francis Shand, James Holme, J W Cropper, Charles Turner.

8. Health—Thomas Dover, Chairman ; Richard Sheil, Deputy-Chairman ; Robertson Gladstone, Thomas L Hodson, Roger Haydock, J J Stitt, Oliver Holden, W H Anthony, Richard M Beckwith, C T Bowring, Thomas Vernon, William Barton, Daniel Crosthwaite, James Crellin, James Holme, T Avison, J Clerk.—Meets every Thursday, at 11 o'clock, at the Town Hall.

9. Water—T L Hodson, Chairman ; William Earle, Deputy-Chairman ; John Woodruff, Thomas Wagstaff, John Farnworth, William Bennett, Thomas Chilton, James Mellor, J R Jeffrey, James Crellin, James Ryley, J J Stitt, Thomas Vernon, Charles Turner, James Holme, David Rae.—Meets every Monday, at 2½ o'clock, at the Town Hall.

10. Gardens and Library and Museum—James A Picton, Chairman ; Richard M Beckwith, Deputy-Chairman ; William Bennett, Wm. Earle, James Steains, Joseph Kitchen, Charles Mozley, Charles T Bowring, C J Corbally, William Brown, M.P., George Holt, Thomas Avison, T B Job, David Rae, Richard C Gardner, J. Ryley.—Meets every

Thursday at the Central Library, at 9 o'clock, a.m., and at the Town Hall on the last Friday in the month, at 2½ o'clock.

11. Baths—Thomas Wagstaff, Chairman; James Parker, Deputy-Chairman; Walter P Jeffreys, S R Graves, William Barton, James Crellin, Charles Mozley, Thomas Robinson, D Rae, R W Houghton.—Meets every Monday, at 12 o'clock, at the Town Hall.

12. Improvement (Special)—William Earle, Chairman; William Bennett, Deputy-Chairman; John Aikin, T Bold, R Gladstone, S R Graves, S Holme, J R Jeffery, Charles Mozley, J A Picton, R Sheil, James Steains, J Stewart, C T Bowring, James Holme.

13. Special Committee on Removal of Public Offices—C Turner, Chairman; James Ryley, Deputy-Chairman; Robertson Gladstone, William Earle, J A Picton, Richard Sheil, Thomas L Hodson, John Aikin, John Stewart, Thomas Dover, Samuel Holme, J R Jeffery, F A Clint.

The council and its committees are aided by the following officers in the administration of the government of the borough:

OFFICERS OF THE CORPORATION.

Gilbert Henderson, Esq., Recorder
Edward James, Esq., Q.C., Assessor of the Court of Passage
John Smith Mansfield, Esq., Stipendiary Magistrate
Mr. Wm. Shuttleworth, Town-clerk, Prosecuting Solicitor, and Registrar of the Court of Passage
„ John Weightman, Surveyor
„ Archibald Tweedie, Treasurer
„ James Newlands, Borough Engineer
„ Peter Wright, Clerk of the Peace
„ Philip Finch Curry, Coroner
„ John H. Bally, Auditor
„ John Wybergh, Jun., and Mr. Philip Fred. Garnett, Clerks to the Magistrates
„ John Fleet, Sergeant-at-Mace
Major John James Greig, Head Constable
Mr. William Jameson, Governor of the Borough Gaol and House of Correction
Rev. Thomas Carter, Chaplain of the Borough Gaol and House of Correction

Mr. Fras. Archer, Surgeon of the Borough Gaol and House of Correction
„ Thomas White, Treasurer under the provisions of the Health, Water, and Improvement Acts
„ Thomas Duncan, Engineer of the Water Works
„ John Rodgers, In-door Manager of the Water Works
„ Thomas Fresh, Inspector of Nuisances

THE ADMINISTRATION OF JUSTICE.

The Mayor and his predecessor are *ex-officio* magistrates of the borough, but from the immense extent of business, and the necessity for sound legal knowledge and uniformity of decision, in the administration of justice, to so large a community, and in so great a variety of questions as come before the bench, it has been found desirable to appoint a permanent stipendiary magistrate, to preside from day to day, with a bench of magistrates to assist him. The following is a list of the public officers and magistrates to whom this important branch of local government is entrusted:

JUSTICES OF THE PEACE FOR THE BOROUGH.

WILLIAM PRESTON, Esq., Mayor
GILBERT HENDERSON, Esq., Recorder
JOHN SMITH MANSFIELD, Esq., Stipendiary Magistrate

Francis Shand, Esq.
Samuel Holme, Esq.
William Earle, Esq.
William Rathbone, Esq.
H Earle, Esq.
Joseph C Ewart, Esq., M.P.
E Cropper, Esq.
R Benn, Esq.
George Holt, Esq.
Hugh Hornby, Esq.
C Chaloner, Esq.
James H Smith, Esq.
C Turner, Esq.
Thomas Sands, Esq.
G Grant, Esq.
T W Rathbone, Esq.
William Dixon, Esq.
Edward Heath, Esq.
John Stewart, Esq.
T D Anderson, Esq.
J A Tobin, Esq.
C S Parker, Esq.

James Aikin, Esq.
Thomas Bolton, Esq.
Henry Romilly, Esq.
E Evans, Esq.
George Hall Lawrence, Esq.
J H Turner, Esq.
Robertson Gladstone, Esq.
J Crosthwaite, Esq.
James Stitt, Esq.
F A Hamilton, Esq.
J R Jeffery, Esq.
Richard Sheil, Esq.
William Brown, Esq., M.P.
David Hodgson, Esq.
John Buck Lloyd, Esq.
Robert Rankin, Esq.
Alfred Castellain, Esq.
Raymond Wm. Houghton, Esq.
Lawrence Peel, Esq.
Robert Hutchison, Esq.
Thomas Chilton, Esq.
James Tyrer, Esq.
John Torr, Esq.
James Holme, Esq.
T B Barclay, Esq.
Daniel Mather, Esq.
A Hodgson, Esq.
James Mellor, Esq.
William Nicol, Esq.
Stanley Percival, Esq.
Sir Joshua Walmsley, Kt., M.P.

1861 - 5

THE CORPORATE INCOME AND EXPENDITURE.

The business of the finance committee of the corporation is at once that of a Chancellor of the Exchequer, and of a steward. The committee has to look to the providing and the administering of ways and means, and to exercise a general superintendence over the estate of the corporation. This estate consists of money owing to the corporation by the Mersey Docks and Harbour Board, of ground and other rents at Liverpool and in the neighbourhood, of fines on the renewal of leases in market dues and tolls, and of fines inflicted in the administration of justice. Previous to the year 1858 the corporation possessed a revenue of from £120,000 to £135,000 a year, derived from the ancient dues of the crown, more recently known as town dues; but by the Mersey Docks and Harbour Act of 1857 this revenue was transferred to the Mersey Docks and Harbour Board, to be applied to harbour purposes, on payment to the corporation of the sum of £1,500,000, and on condi-

tion of purchasing the Birkenhead docks, at the price which the corporation had paid for them, and of completing those docks. The corporation still possess valuable landed property at Birkenhead, as well as in Liverpool and in the neighbourhood, and other property, producing, in the whole, an income of upwards of £103,960 a year.

The income of the corporation stated below is expended, as will be seen, for various purposes of public utility; partly, according to the provisions of several acts of parliament; partly, at the discretion of the Town Council. The principal head of expenditure is that which relates to police, the prevention of crime, and the administration of justice. This head of expenditure, which absorbs more than one-third of the income of the corporation, will be found stated under its various items, in the account of the corporate expenditure, given below. Next in extent and importance is the expenditure for sanitary purposes, and this is followed by various items of expenditure, also enumerated, of great public utility.

The following is the estimate of the income and expenditure of the corporation for the present year as laid before the Town Council by the finance committee:

"At a meeting of the finance committee, holden on Friday, the 28th day of January, 1859, present, Mr. John Stewart, chairman, &c., the following report having been read, resolved, that the same is approved, and that it be printed, with the data on which it is founded, and that a copy be sent to every member of the council.

"The financial sub-committee appointed to consider the probable income and expenditure of the corporation during the present municipal year, (commencing on the 1st of

September, 1858, and ending on the 31st of August, 1859,) report as follows:

REPORT ON THE INCOME AND EXPENDITURE OF THE CORPORATION.

"That they have investigated the accounts of the corporation, and considered the state of the income and expenditure.

"That they are of opinion that the income of the corporate estate, from all sources, cannot be estimated for the current year at more than £103,960 0 0

"That the amount of obligatory expenditure cannot be estimated at less for the current year than 83,820 0 0

Leaving a gross surplus of £20,140 0 0

"And that the continuance of branches of discretionary expenditure (the schools, the public charities, &c.) for the public benefit of the inhabitants, hitherto sanctioned annually by the council, may be stated at £6,277 0 0

"And also sundry improvements already sanctioned by the council 3,300 0 0

9,577 0 0

Leaving as available surplus £10,563 0 0

JOHN STEWART, Chairman of the Sub-Committee.

ESTIMATED EXPENDITURE FOR THE YEAR ENDING 31st AUGUST, 1859.

	Actual. 1857-8.		Estimate. 1858-59.
Interest	£13,499	..	per contra.
Annuities	730	...	£730
The Mayor	2,000	...	2,000
Salaries and Stipends	3,508	...	4,265
General Law, and Parliamentary Expenses ...	3,554	...	2,100
Town-clerk's Department	2,915	...	2,824
Treasurer's Department	1,156	...	1,173
Surveyor's Department	1,801	...	1,788

	Actual. 1857-58.		Estimate. 1857-59.
Leave Looker's Department	£466	...	£466
Building Surveyor's Department	654	...	680
Weights and Measures Department	434	...	450
Gas Inspector's Department	234	...	153
Town Hall	198	...	350
Sessions House	18	...	30
Establishment of the Town Hall	1,624	...	1,723
Establishment of the Sessions House	419	...	420
Establishment of the Law Courts and St. George's Hall	3,127	...	2,000
Judges' Lodgings	549	...	550
The Mayor's Stables and Coach House	22	...	100
St. George's Church	521	...	1,000
St. Luke's Church	688	...	688
St. Michael's Church	788	...	736
St. Martin's Church	629	...	630
St. Thomas's Church	250	...	250
Public Walks and Gardens	130	...	300
Rates and Taxes	1,896	...	2,473
Rates under Sanitary Act	5,375	...	5,375
Exhibition Rooms	150	...	—
Slaughter Houses	240	...	240
Insurance from Fire	621	...	668
Landing Stage	228	...	—
General Repairs	1,630	...	1,600
Conservancy of River Mersey	1,687	...	—
General Disbursements	769	...	774
Municipal and Parliamentary Expenses	466	...	470
Constabulary Force and Police Expenses	23,701	...	20,058
Lighting and Fire Police Expenses	2,426	...	1,000
Establishment of Borough Gaol	9,733	...	10,386
Prosecutions at Assizes and Sessions	721	...	6,300
Coroner's Inquests	1,292	...	1,300
County Expenses	7,118	...	7,000
County Court Prisoners' Expenses	142	...	150
Baths and Wash-houses, Paul-street	243	...	150
Wash-houses, Frederick-street	715	...	300
Incidental Expenses of Baths and Wash-houses	164	...	150
Observatory	145	...	—
	£99,378		£83,820

ESTIMATED INCOME FOR THE YEAR ENDING
31st AUGUST, 1859.

	Actual 1857-58.		Estimate. 1857-59.
Interest Account	——	...	£26,061
Town Dues and Anchorage	£43,839	...	47
Town Dues and Anchorage at Runcorn	1,002	...	—
Fines for Leases	23,170	...	20,000
Fines for Coal Vaults, Ovens, and Areas	528	...	100
Markets	7,910	...	7,465
Reserved Rents	—	...	3,042
Ground Rents	382	...	500
Tenants at Will	10,133	...	10,424
Tobacco Warehouse	6,348	...	6,292
River Craft Dock	2,514	...	2,475
Improvements, Wapping	287	...	300
Estate, Wapping	2,368	...	2,393
Ditto, Newsham-house	1,166	...	1,140
Ditto, Yellow-house	378	...	140
Ditto, Green-lane	45	...	100
Ditto, Birkenhead	6,095	...	6,226
Magazines at Liscard	98	...	98
Cottages at Walton	320	...	333
Magistrates' Clerks	2,717	...	2,778
Fines on Summary Convictions, &c.	2,919	...	3,130
Baths, Cornwallis-street	123	...	250
Ditto, Pierhead	749	...	600
Pinfold Dues	19	...	15
Chain Testing Machine	13	...	50
Lighthouse, Rock Perch	1	...	1
Prosecutions at Assizes and Sessions	—	...	10,000
	£113,093		£103,960

IMPROVEMENTS MADE AND WORKS EXECUTED BY THE CORPORATION.

In a town like Liverpool, in which the population is increasing at the rate of 10,000 inhabitants every year, and in which streets are spreading out for miles in all directions,

and houses are rising by the thousand yearly, nothing but the most unremitting attention can prevent errors in the construction of houses, streets, and sewers, fatal to all sanitary progress.

The work in this department of the public service never ceases. There is constantly a great extent of sewerage in course of construction, averaging nearly 15 miles a year. There is besides the drainage of houses, where the owners have failed to comply with the notice of the council. The paving works, too, are constantly progressing, for besides the repairs, there is the work of remodelling the form of the streets, and substituting new set paving for the old boulders. Every new street that is laid, and every house that is built, must be conformable to levels furnished by the engineer, and these are considered with reference to an improved system of levels throughout the borough.

Since 1847, 258 new streets, containing an area of 40,128 superficial yards, have been paved by the council, at the expense of the owners, besides those which have been paved by the owners themselves. At the time when the sanitary act came into operation, the number of streets in Liverpool was 1,405, and the total length of sewers and drains of every description was 53 miles 114 yards. But these sewers and drains were only outlets for surface water, and many of them were badly constructed.

The length of sewers and main drains which have been constructed since 1847, is 146 miles; including a main outlet sewer, probably the largest work in the country, being six miles long, and for a great portion of its length, six feet high, and four feet wide. The cost of the sewers and drains has been £215,231.

The defects of the old sewers have been remedied, and many of them re-constructed. The gutters, which were large receptacles for filth, have been remodelled on better principles.

All the new and many of the old sewers have been ventilated.

The paving works are of vast extent. No less than 635,148 yards of set paving, of the best kind, have been substituted for an equal extent of old rough boulders, and 84,088 yards of footpaths have been substantially flagged. The cross section of the streets has been materially improved. Formerly the cross section used to be made so round, that the only safe path for a vehicle was the centre of the street, and huge water channels formed of rough boulders, with a deep breaching next the footpath, not only diminished partially the width of the road, but were absolutely dangerous. Now the street is so level across that every part of it is available for traffic, and the channels are formed with large tramways, which are not only easily kept clean, but serve as an auxiliary to the footpaths.

A great number of public conveniences of the best construction have been erected throughout the town, and have had the effect of removing nuisances and enforcing decency.

The slaughter houses, by means of ventilation, drainage floors of non-absorbent materials, the laying on of water, and the enforcement of periodical cleansing, have been rendered as little objectionable as possible.

The number of scavengers has been so much augmented as to render cleansing and watering the streets possible, and this has been so aided by the extension of the sewer-

age, and the improved paved surface, that although the number of streets in the borough has increased from 1,405, in 1847, to 2,002 in 1858, the cost of scavenging has diminished from upwards of £14,000 in the former to £10,207 in the latter year.

The increased supply of water, and the introduction of an improved apparatus, permits the street watering to be efficiently performed.

It will be seen that in all these works public health and public convenience have been the conjoined objects.

Three years ago all the houses in the borough were re-numbered on a uniform system. Taking the Town Hall as the starting point, the line of Dale-street, London-road, and Kensington (a line running east and west) was made the division between the northern and southern parts of the borough. The numbers of the streets running east and west, commence at the river or west end; the numbers in those running north and south, begin at the division mentioned; in the northern division they increase from London-road line northwards, and in the southern division from the same line southwards. The odd numbers are on the left, and the even numbers are on the right hand side of the street going from the Town Hall, or from the line above mentioned. The alterations involved the painting or affixing 40,538 new numbers, which, together with lists of the alterations made for the Postoffice, and other public bodies, cost a sum of £875 5s. 9d.

The lighting of the town is under the inspection of the borough engineer, and the treasurer to the health and watch committees.

The public lamps are upwards of 4,000 in number,

besides the large lamps erected in open places, or where streets intersect each other. Of these there are eleven already erected, and five more about to be erected. One of these is intended to be placed in London-road, near the end of Greek-street. In place of the steps which serve as a base for the others, this is to have a granite base, with fountains. The work is in progress.

It is proposed to substitute wide iron bridges over the canal for the dangerously contracted stone bridges which now exist.

PROPOSED PUBLIC OFFICES.

It has been proposed to concentrate in one building in Dale-street, all the offices connected with the municipal government of the town; the corporate estate, the water supply, the cleansing and lighting, the surveillance of buildings, the inspection of nuisances, the inspection and testing of gas meters, the suppression of smoke, the licensing of hackney carriages and badge porters, the paving, and sewerage, and sanitary matters generally, all of which are at present inconveniently scattered in various localities, distant from each other. In the situation proposed, they would be in immediate proximity to the police establishment and magistrates' courts, and the business centre of the town. No final decision has been come to on this subject.

PUBLIC BATHS AND WASH-HOUSES.

There are three public bathing establishments in Liverpool, and two public washing establishments.

The corporation have incurred a large expenditure for the purpose of supplying the means of comfort, health, and cleanliness, by means of baths and washhouses.

The salt-water baths, at St. George's Pierhead, contain a gentleman's plunge bath and a lady's plunge bath, with suites of private baths, both cold and hot. The water used is carefully filtered through gravel beds, and is beautifully clear. These baths were built at a cost of £27,772, on land of the value of £10,048. They are used by between 40,000 to 50,000 persons yearly.

The Paul-street Baths, also built by the corporation, cover 1,620 yards of land, and are constructed of brick, in the Elizabethan style, with stone plinths and cornices. There are plunge baths both for males and females, with 34 separate baths, and 4 vapour baths. The private baths are of slate, with the exception of three, in the upper story, of white marble, for which different prices are charged.

At the rear of these baths, and separated from them by a yard, there are six washing houses, of one story in height, and containing a boiler and washing vessels, lighted by sky-lights, and having air tubes in the floor and ventilation in the roof. In a part of the site furthest removed from these wash-houses, there is a building for washing infected clothing. The cost of the Paul-street Baths, which were built entirely for the use of the poor, and are in a great measure free, was upwards of £10,000.

The Cornwallis-street Baths consist of three large plunge baths (1st, 2d, and 3d class), and numerous separate baths. The terms of admission for bathers are very moderate—1d., 3d., and 6d., for cold baths, and 2d., 6d., to 1s., for warm

baths. These useful and agreeable baths are used by upwards of 100,000 persons yearly.

In addition to these three suites of baths, there are wash-houses erected by the corporation in Paul-street and Frederick-street, for the use of poor families.

MEASURES FOR INSURING THE PUBLIC HEALTH.

Up to the year 1848, Liverpool had the evil reputation of being the most unhealthy town in the kingdom; nearly every year it was scourged by typhus fever, and other diseases arising from impure air, bad drainage, damp houses, poverty, and bad diet. Since that time the whole town has been re-drained and re-sewered at a cost of upwards of £200,000, many hundred thousand pounds have been expended in bringing an additional supply of water from a distance of between twenty and thirty miles, the lowest class of the population have been compelled to abandon the wretched cellars in which they formerly lived, and the most unremitting care has been exercised in removing every nuisance dangerous to the public health. Immense results have already been achieved; and, though much remains to be done, the efforts to effect it never cease. In the four years (1837-40) immediately subsequent to the passing of the Registration Act (Births and Deaths), one person in every 450 of the inhabitants of Liverpool died annually from fever, whilst in the four years, between 1853 and 1856, not more than one in 1038 died.

The following table will show how prodigious is the difference in the rate of mortality in the different districts of the town. This depends partly on the nature of the

locality and the construction of the streets and houses, but still more on the rank, means, and habits of the people. The ages at death, in 1856, were as follows:—Below 1 year, 3,017; 1 to 2 years, 1,519; 2 to 5 years, 1,473; 5 to 15 years, 746; 15 to 20 years, 252; 20 to 40 years, 1,668; 40 to 60 years, 1,640; 60 to 80 years, 1,048; above 80 years, 178; unknown, 33.

RATE OF MORTALITY IN THE DIFFERENT WARDS OF THE BOROUGH IN 1856.

Wards, &c.	Deaths.	In 10,000 Inhabitants.
Vauxhall	863	394
St. Anne's	738	355
Exchange	475	334
Scotland	2061	314
Lime-street	425	290
St. Paul's	379	287
Great George	482	284
Castle-street	199	270
Pitt-street	265	257
Abercromby	435	233
Rodney-street	421	221
St. Peter's	184	217
Workhouse and Fever Hospital	908	—
Hospitals	346	—
Parish of Liverpool	8181	299
Everton and Kirkdale	1065	247
South Toxteth	867	240
West Derby	588	211
North Toxteth	661	208
Workhouse and Fever Hospital	196	—
Kirkdale Gaol	7	—
Industrial Schools	9	—
Out Townships	3393	227
Borough of Liverpool	11,574	273

With regard to sex; of those who died during the year, 6,062 were males; 5,212 females—the death-rate being for

the former 296, and for the latter 253 in 10,000. Of 16 who died at the age of 90 and upwards, 14 were females; one of these—formerly a domestic servant—being recorded as "about 100 years old" at the time of her death.

The births registered during the year in the *parish* were 9,270, being 80 more than in the preceding year, and giving an excess of 1,089 over the deaths. In the *out townships* the births were about 5,584, or 240 more than in the year preceding, and giving an excess over deaths of 2,191. The total births in the borough were thus 14,854, and the excess of births over deaths 3,280, leaving about double that amount to be added to the population of Liverpool by immigrants from other parts. The births were in the proportion of 35 to every 1,000 inhabitants; in the metropolis the proportion was 33 in 1,000.

MORTALITY OF LIVERPOOL IN THE YEARS 1857 AND 1858.

The deaths in Liverpool, in 1857, were 12,951, being 1,377 more than in the previous year, when, however, the mortality was lower than in any year previously recorded. The death-rate was a fraction under 30 in the 1,000.

The mortality was, in the March quarter	3,024
June	2,840
September	3,429
December	3,658

From diseases of the zymotic (infectious or contagious) class the deaths were 3,488, being about the average of the preceding five years, but 418 more than in 1856.

Fever caused 424 deaths, being 82 more than in the year preceding, when the mortality from this disease was

unprecedentedly low. The deaths were in the ratio of 1 in 1,021 of the population.

Diseases of the lungs caused 3,887 deaths, of which 1,547 were from consumption. Under this head, as compared with the previous year, there is an increase of 467.

In 1858 the deaths in the borough were estimated at 13,937, giving a death-rate of 31 in 1,000, about the average of the preceding five years, but considerably less than that of the ten years preceding.

This increased mortality, as compared with the three previous years, seems to have been chiefly caused by the severe weather which prevailed in the months of February and March, and by an epidemic of scarlatina, which has been more prevalent and fatal than any with which Liverpool has been visited since 1848, having carried off 1,175 children and 11 adults. The deaths from zymotic diseases, including 1,150 from scarlatina, are estimated at 4,258. Of these 544 (estimated) were from fever, being a greater number than in any of the five preceding years, but still giving a death-rate little more than one-half of the annual average previous to the operation of the Sanatory Act.

From diseases of the lungs (including 1,618 from consumption), the deaths were (estimated) 4,054.

CRIME—ITS DETECTION AND PUNISHMENT.

The whole number of indictable crimes committed in the borough of Liverpool, in the year ended the 29th September, 1858, was 5,012. Nearly nine-tenths of these were larcenies of one kind or another, the number of offences against the person being small. The following list and

classification of the offences committed in the above year is from the last annual report published by the watch committee and drawn up by the head constable of the borough Major J. J. Greig:

INDICTABLE OFFENCES COMMITTED IN THE BOROUGH OF LIVERPOOL IN THE YEAR ENDED 29TH SEPTEMBER, 1858.

Offences.	No. of Cases	Total of Criminals.		
		Male.	Fem.	M. & F.
Murder	3	4	1	5
Attempts to murder	1	1	..	1
Shooting at, wounding, stabbing, &c. to do bodily harm	200	122	83	205
Manslaughter	9	9	1	10
Attempt to procure miscarriage	1	1	..	1
Concealing the births of infants	3	..	3	3
Unnatural offence	1	1	..	1
Rape	4	4	..	4
—— Assaults, with intent	21	24	..	24
Bigamy	5	4	1	5
Child stealing	3	..	3	3
Assault and inflicting bodily harm	52	48	12	60
Assaults on peace officers	10	10	1	11
Assaults, common	1	1	..	1
Burglary and house-breaking	28	25	17	42
Breaking into shops, warehouses, &c.	36	55	12	67
Attempts to break into houses, shops, warehouses, &c.	4	3	1	4
Robbery on the highway	33	47	7	54
Attempts to rob on the highway, and demanding money by menaces	5	5	..	5
Horse-stealing	3	3	..	3
Cattle-stealing	1	1	..	1
Larceny to the value of £5 in dwelling-houses	22	13	14	27
Larceny from the person	827	205	805	1010
Larceny by servants	97	54	51	105
Larceny on rivers, canals, wharfs, &c.	96	121	9	130
Larceny, simple	867	485	533	1018
Stealing fixtures, shrubs growing, &c.	3	7	..	7
Attempts to steal	7	8	..	8
Embezzlement	57	57	..	57
Larcenies by servants in the postoffice	5	5	..	5
Receiving stolen goods	99	45	63	108
Frauds, and attempts to defraud	116	97	35	132
Forging, and uttering forged instruments	15	13	3	16
Coining, and having implements for coining	3	1	2	3
Uttering, putting off, and having counterfeit coin	94	56	61	117
Arson and other wilful burning	2	1	1	2
Keeping disorderly houses	21	5	18	3
Perjury	8	3	5	8
Other Felonies, viz.:				
Robbery and wounding (sentence of death recorded)	1	2	..	2
Seducing a girl, accompanied by larceny	1	1	..	1
Other Misdemeanors, viz.:				
Intimidating workmen	5	5	..	5
Neglecting family	1	1	..	1
Total	2771	1553	1742	3295

The number of persons apprehended by the police or others on charges arising out of the above crimes, was 2,968, of whom 939 were discharged for want of evidence, and the remainder committed, or bound over to take their trials.

The number of persons convicted at the sessions or assizes, of offences connected with the borough of Liverpool, was 966.

The number of persons proceeded against for offences punishable by summary conviction were 21,612.

Of the persons apprehended by the police 5,486 belonged to Liverpool, 4,861 to other parts of England, 8,799 to Ireland, 1,011 to Scotland, 791 to Wales, 142 to the Isle of Man, and 899 to foreign countries.

THE LIVERPOOL CONSTABULARY.

This admirably organized force is under the command of Major Greig, the high constable. The Liverpool Constabulary (or police) consists of 973 officers and men. It is constituted as follows:—1 high constable; 2 divisional superintendents; 1 in-door superindent; 6 superintendents; 1 superintendent of the fire brigade; 1 governor of the main bridewell; 47 inspectors; 12 clerks; 31 bridewell keepers; 18 detective constables; 113 constables of the first class; 670 constables of the second class; and 70 constables of the third class: total, 973. Of the officers and men composing this force, 581 are natives of England; 234 of Ireland; 94 of Scotland; and 61 of Wales.

THE FIRE BRIGADE.

The Liverpool Fire Brigade consists of 1 superintendent and 122 firemen. The superintendent of the fire brigade resides at the Central Station, in Hatton-garden, and two firemen and one waterman are continually on duty there. At each of the other fire stations there are three firemen on the beat, who relieve each other alternately. There are twelve fire stations, namely:—1st, the Central Station, Hatton-garden, Dale-street; 2nd, the Prince's Dock Station, north end; 3rd, the Collingwood Dock Station; 4th, the Sandon Graving Dock Station; 5th, the Athol-street, Vauxhall-road, Station; 6th, the Rosehill Station; 7th, the Prescot-street, Lowhill, Station; 8th, the Seel-street, off Berry-street, Station; 9th, the Olive-street, Windsor, Station; 10th, the Essex-street, Park, Station; 11th, the Brunswick Dock Station; and 12th, the Salthouse Dock Station. The stations are so distributed that there is no part of the town more than a mile distant from a fire station; and along the docks, and amongst the warehouses and offices, they are much closer.

The following apparatus for extinguishing fires are kept constantly in readiness:—15 engines, capable of throwing water effectively from 80 to 100 feet in perpendicular height; 16 reels, with hose to attach to the high-pressure mains, capable of throwing water effectively to a perpendicular height of 40 to 130 feet, according to the elevation of the main; 6,469 yards of hose; 1 water cart, containing a ton of water; 50 stand pipes; 52 suction pipes; 65 conducting pipes; 36 hydrant pipes; and 13 elbow pipes. There are fire escape ladders and handcarts at each

of the stations, and a large reel carriage at the Central Station.

In consequence of the efficiency of the above arrangements, of the abundant supply of water at all times, and of the improved method of constructing warehouses, there has been no great fire in Liverpool for some years, although the quantity of cotton, oil, turpentine, pitch, saltpetre, spirits, and other inflammable materials brought into the port, has prodigiously increased, during the last ten years. The only considerable fire in the port last year, was the burning of the James Baines, in the Huskisson Dock; but the number of fires which broke out, and was extinguished without doing any serious amount of injury, was 189. The average number of fires yearly, from 1848 to 1858, was 151, giving a total, for that period, of 1623.

THE SELECT VESTRY AND THE PARISH OF LIVERPOOL.

The Select Vestry have the management of the affairs of the parish, in all that relates to the relief of the poor and to the distribution of the large funds raised for that purpose.

The Select Vestry at the present time is composed of the following gentlemen:—

SELECT VESTRY.

The Rev. Augustus Campbell, Rector

Mr William Jones ..... } Churchwardens
Mr John W. Cropper ..... }

Mr William B. Bairstow ..... }
Mr Thomas Owen ..... } Overseers
Mr James Crellin ..... }
Mr Thomas Smith ..... }

Mr Ambrose Byford
Mr Joseph Cafferata
Mr Henry James Cook
Mr James Chesney
Mr William Critchley
Mr James Denton
Mr Thomas Gibson
Mr John Hand
Mr Joseph Hughes
Mr Samuel B. Jackson
Mr Samuel Peck
Mr Samuel Richardson
Mr John Jones
Mr Thomas Luff
Mr Henry John Syred
Mr John Whitby
Mr James Whitty
Mr John M. Syers
Mr Edward Williams
Mr Charles W. Shaw

OFFICERS:

Mr G. H. Thompson, Treasurer | Mr William Rees, District Auditor
Mr. Charles Hart, Vestry Clerk
Mr John Evans, Assistant Overseer and Superintendent Relieving Officer
Messrs R. M'Clelland, James Martindale, Joseph Blewer, Thomas Williams, Charles Walker, and George White, Relieving Officers
Mr Lancelot Hepworth, Out-door Inspector
Mr Thomas Wylie, Surveyor

WORKHOUSE.

Rev Robert Wilson, A.M., Chaplain
Mr Robert Gee, M.D., Physician | Mr Peter Wm. Leather, Surgeon
Mr Roger Parker and Mr Richard Jones, Assistant Resident Medical Officers
Mr Shillinglaw, Apothecary
Mr George Carr, Governor | Mrs Eleanor Ritson, Matron

BURIAL BOARD.

Mr Enoch Harvey, Clerk

It appears from the last annual report of the Select Vestry, that the amount expended, in the parish of Liverpool, for the relief of the poor, in the year ending the 27th March, 1858, was £110,758 3s. 6d.

On examining the principal items of expenditure, it appears that the sum of £39,525 15s. 1d. was expended in

the support of the poor receiving in-door relief in the Workhouse. The average number of persons receiving relief in the Workhouse, during the twelve months included in the account above described, was 2,182. This comprises the mass of the permanent adult poor of the parish. They are supplied in the Workhouse with provisions and other necessaries, at a weekly cost of 2s. 7¼d. per head, and are furnished with clothing at an average cost of 4d. per week, or rather more than 17s. per year.

The pauper children, belonging to the parish, are reared and instructed in the Industrial Schools, which are established in large and commodious buildings erected for that purpose, at Kirkdale, a healthy and agreeable village to the north of Liverpool. These schools were established there, partly for the purpose of insuring, as far as possible, the health and strength of the poor children reared within them; partly for the purpose of insuring a good classification in the course of their instruction; and partly to keep them free from the contamination, arising from the very indifferent company always found in a Workhouse. The charges in respect of the Industrial Schools amounted in 1858, to £12,333 14s. 2d. per annum. For this sum, an average number of 942 children are instructed and maintained. The average weekly cost of each child in the Industrial Schools, for provisions and necessaries, is 2s. 8¼d., and for clothing 4¾d., being a little more than the cost of the adult paupers in the Workhouse.

The other charges on the parish amounted in the year ended the 27th March, 1858, to £58,898 14s. 3d. The most important item of this large amount consists of the sums expended in the relief of the out-door paupers. The

average number of out-door paupers during the year was 10,870, and they were relieved at an average weekly cost of 1s. 0¾d. each. The amounts paid in out-door relief were as follows:—To resident poor, and casual applicants, £21,992 16s. 6d. in money, and £8,456 1s. 2d. in bread from Workhouse. In addition to these items, the cost of maintaining pauper lunatics in asylums was £8,443 10s. 8d.; that of maintaining the blind poor in asylums was £172 5s. 11d.; and that of maintaining the deaf and dumb poor in asylums was £131 5s. 0d. The sums paid for medical relief were £1,370 to district medical officers, £213 10s. to dispensers and assistants, £52 for rent of dispensaries, £622 5s. 10d. for drugs in the Workhouse, £108 10s. 4d. for medical appliances, £424 7s. 5d. for drugs and appliances in Kent-street dispensary, and £437 9s. 2d. for drugs and appliances in Burlington-street dispensary.

The total rateable value of the parish of Liverpool, as per rate-book, was £1,117,326; the poor's-rate amounted to 2s. in the pound, and the portion of the rate collected amounted to 85 per cent. The poor's-rate of 2s. in the pound imposed in 1857 produced the sum of £93,863 8s. 4d., in addition to which the residue of the rate of 1856, amounting to 2s. 4d. in the pound, produced £2,675 19s. 11d., and the residue of the rate of 1855, amounting to 2s. 9d. in the pound, produced £14 5s. 11d., making the total from rates £96,553 14s. 2d. Adding to this the sum of £6,595 17s. 9d., received from various other sources, the most important being a payment of £2,494 10s. 7d. from the Treasury, for schoolmaster's and schoolmistresses salaries, medical officer's salaries, &c.; another payment of £1,131 1s. 3d. for lunatics transferred to county, and £1,548 15s. 4d.

for interest allowed by treasurer,—the sum total of the receipts for the year ending the 27th March, 1858, was £103,149 11s. 11d.; the expenditure, as already stated, having been £110,758 3s. 6d.

The rates raised for the relief of the poor during the last twelve months amounted to 2s. 4d. in the pound.

THE PUBLIC CHARITIES OF LIVERPOOL.

The public charities of Liverpool are most numerous and liberal, and are calculated to meet every form of bodily distress, and every moral evil, which is capable of being mitigated by the action of benevolence. The following are the most important of the institutions established for these purposes:

The Royal Infirmary, in Brownlow-street, has now existed for more than a hundred years, having been founded in the year 1745; and has been the means of relieving the sufferings, and saving the lives, of many hundred persons, yearly, from the time when it was established. Persons suffering from violent accidents are admitted into the infirmary any hour of the day or night, without recommendation; and patients suffering from disease are admitted daily, on recommendation, between eleven and twelve.

There is a Lunatic Asylum adjoining the Infirmary for the relief of mental maladies.

The Northern Hospital, in Great Howard-street, and the Southern Hospital, in Greenland-street, both in the neighbourhood of the docks, were established, the former in 1834, the latter in 1842, chiefly for the purpose of

affording immediate relief, in the numerous cases of accident which occur on the dock quays, on board the ships in the harbour, in warehouses, and generally in the busiest parts of the town. They are both of them open day and night, without any recommendation, in cases of accident, except the urgency of the distress. The hospitals, like the Infirmary, and the other charities of the town, are supported by subscriptions, donations, and legacies.

The NORTH DISPENSARY, 56, Vauxhall-road, and the SOUTH DISPENSARY, 1, Upper Parliament-street, have now existed for upwards of eighty years. They were established for the purpose of affording advice and supplying medicine to the sick poor. In the course of every year these excellent institutions relieve about forty thousand persons, of whom thirty thousand are relieved at the institutions, and ten thousand at their own homes.

The DISTRICT PROVIDENT SOCIETY, 2, Queen's-square, was established for the purpose of promoting prudence and economy on the part of the poor, and of assisting those who are willing to assist themselves.

The STRANGERS' FRIEND SOCIETY was established in the year 1765, for the purpose of relieving distressed families and strangers, and finds ample employment for its benevolence, amongst the thousands of destitute persons, who every year arrive in the port from different parts of the world.

To prevent the spread of fever, as well as to relieve it where it exists, a FEVER HOSPITAL has been established in Mount-pleasant, near to the Parish Workhouse, and is supported from the poor's rates.

There are also in Liverpool institutions for the relief of

diseases of the Eye and Ear; a School for the Blind; an Asylum for the Deaf and Dumb; a Ladies' Charity and Lying-in Hospital; a Society for Shipwrecked Mariners; Schools and Homes for Orphan Boys and Girls, and many others. There are altogether upwards of seventy public charities in Liverpool, established for purposes of the highest benevolence, and liberally supported by the contributions of the humane and generous.

MERCANTILE MARINE SERVICE ASSOCIATION.

The general objects of this valuable institution are to improve the position and education of the commanders and officers of the British merchant service, by raising the standard of nautical knowledge, the collection of approved new works, charts, meteorological and other reports, instruments, &c., by establishing schools afloat and on shore, for the training and education of those entering the service, and by providing refuges for sick, worn-out, and disabled members. It also watches all parliamentary proceedings, questions, and regulations affecting the service, and receives and circulates information relating thereto.

The association consists of "members" who are masters, officers, and engineers in the merchant service, and "associates" who are shipowners, and other persons interested in the service.

The number of members is about 1,000, its affairs are managed by a council of not less than 40 members, and it has commodious reading and news-rooms at No. 20, Water-street.

THE SCHOOL FRIGATE CONWAY,

Which belongs to the Mercantile Marine Service Association, is moored in the Mersey, near the Rock Ferry slip, and is intended for the education of boys for the sea service. The management of the school is vested in a committee of twenty-four, half of whom are merchants or shipowners, and half masters nominated from the council of the association.

The boys admitted to the school are—so far as the funds of the institution will permit—the sons of deceased or destitute masters, officers, and seamen of the merchant service whose circumstances will not enable them to pay for their education, and boys of any class, intended for the sea service, whose friends will pay wholly or in part for their maintenance and education.

The first class of boys are elected by subscribers, of not less than one guinea per annum, to the school fund. Subscribers have one vote for every guinea subscribed, and donors of ten guineas or upwards are life members, and have one vote for every ten guineas given.

Donors of fifty pounds or upwards have the nomination of a boy, subject to the regulations and approval of the committee,—a preference being given to the children of deceased and unfortunate members of the Mercantile Marine Association of Liverpool.

All boys are required to produce satisfactory characters, must possess the ordinary rudiments of education, and will be subject to inspection as to their physical capacity for the service. No boy is taken into the school under the age of twelve, nor allowed to remain longer than three years.

The ordinary course of tuition is reading, writing, arithmetic, and the usual branches of a sound English education. For such boys as are capable, it will be extended to trigonometry, navigation, nautical astronomy, &c. The boys are regularly and carefully exercised, and instructed in all the duties of a seaman in a first-class ship.

THE PUBLIC PLACES OF BUSINESS.

A large portion of the business of Liverpool is commenced and completed on the Exchange, which is open from eight in the morning to eight at night, and is especially crowded from two to four in the afternoon. In fine weather the flagged area enclosed by the buildings of the Exchange is the principal place of business; but in winter and in wet or stormy weather, the business of the port is transacted in the Exchange News-room; that relating to marine insurance, in the underwriters' room, above the Exchange News-room; and that relating to stocks and shares, in the Stock Exchange, on the opposite side of the Exchange-buildings. The business of the corn trade is transacted in Brunswick-street, in fine weather, in offices in stormy weather, and in the Corn Exchange, in Brunswick-street, on Tuesdays and Fridays, which are the market days of the corn trade. Much of the business of the timber trade is transacted in the open air, on the quays, in the neighbourhood of the Brunswick Dock, and the rest on the Exchange, or in offices. The business of the cattle trade is transacted at the cattle market, at Stanley, about three miles from Liverpool, where the attendance of buyers and sellers and the show of cattle are very great.

The flagged area surrounded by the handsome pile of buildings, known as the Exchange-buildings, is the great resort of the merchants and brokers of Liverpool, and there ten times as much business is commenced and set in train, as ever was transacted on the Rialto of Venice, or the famous Exchange of Antwerp. The Liverpool Exchange differs from the Royal Exchange of London, in being open all day long. The hours of high 'Change are from two to four in the afternoon, and many hundreds, and sometimes even thousands of merchants, shipowners, brokers, and strangers interested in merchandise, assemble, covering the the flags of the Exchange area, in fine weather, and crowding the spacious news-room, in wet.

The present Exchange-buildings were erected by a spirited body of propietors, who united for this purpose in the year 1801. The original capital, amounting to £90,000 was subscribed in a few hours. Last year, the proprietors, feeling that the Exchange News-room was no longer large enough for the commercial requirements of the port, applied for powers to enlarge it. In the course of the discussion to which the proposal gave rise, it was urged by the Chamber of Commerce, and a large body of merchants, that an enlargement was required, on a much larger scale than that proposed, or than was possible within the limits which were under the control of the company of proprietors. A bill was therefore passed, authorising an enlargement, but leaving the nature and extent of that enlargement open for discussion and arrangement, until the close of the present session of parliament (1859).

This will now be the subject of consideration and arrangement. The general desire is, that justice should be done, in a liberal spirit, to those who represent the founders of the Exchange-buildings, and, at the same time, that ample accommodation should be afforded to the great and rapidly increasing mercantile community of Liverpool.

The number of subscribers to the Exchange News-room is 2,665.

The following is a summary of the financial statement of the directors of the Exchange-buildings, as read at the general meeting, on the 31st January, 1859.

Dr.	£	s.	d.	Cr.	£	s.	d.
To dividend for 1857 on 800 shares at £9 9s. per share	7,560	0	0	By Balance of account for 1857	8,578	0	0
To amount paid in lieu of the right of nomination to the news-room for 1858 on 800 shares, at £3 3s. per share	2,520	0	0	By amount of subscription to news-room, &c.	8,821	9	11
To disbursements on account of the news-room	3,462	9	2	By rental of building, from the 31st December, 1857, to 31st December, 1858	7,091	4	7
To amount paid on account of the building	1,083	11	7	By contingent fund for extraordinary expenses	1,450	18	11
To parliamentary expenses	1,450	18	11		£25,941	13	5
To balance	3,858	13	9	By balance brought down	9,858	13	9
	£25,941	13	5	Deduct amount to be transferred to the contingent fund	246	13	9
Contingent fund invested in the New 3 per cents	£5,765	5	1	Disposable balance	9,612	0	0

THE STOCK EXCHANGE.

The investment of upwards of £300,000,000 in railways, and of sums scarcely less enormous, taken in the aggregate, in other joint stock companies, has given a very great extension to the business of the Liverpool Exchange, the business of which is conducted under regulations agreed on by all the members, which ensure great regularity and

promptitude, in the performance of business and the fulfilment of engagements.

Stock Exchange, 2, Exchange-buildings

THE CORN EXCHANGE.

The Corn Exchange, situated in Brunswick-street, is a handsome and commodious building. It was greatly enlarged a few years since, and is in every respect well fitted for the wants of the important and ever increasing trade, for and by which it was erected. The number of stands in the Corn Exchange is 151. There are also forty-nine gentlemen, or firms, who are allowed to transact business, without having stands, on payment of the usual subscription.

COMMERCIAL ASSOCIATIONS.

In carrying on so great a commerce and navigation, as that described in the preceding pages, it has been found desirable, in many cases, and in some absolutely necessary, to form and organise associations and other public bodies, to promote objects connected with those interests, which are beyond the power of individuals. We propose to give a list and a brief sketch of the various public bodies.

THE LIVERPOOL CHAMBER OF COMMERCE.

The Liverpool Chamber of Commerce was established in the year 1849, for the following important purposes:

1st, To promote measures calculated to benefit the mercantile and trading interests of its members, and of the town and neighbourhood generally.

2nd, To represent and express the sentiments of the commercial community.

3rd, To undertake, by arbitration or otherwise, the settlement of questions and disputes arising out of trade, when submitted to it for decision.

4th, The chamber being instituted solely for commercial purposes, all questions of party politics, general or local, are excluded.

In order that these objects might be fully carried out, provision is made in the executive of the chamber for due representation of the various interests of the town, by the appointment, to the council, of deputies from the other commercial associations. The council consists of honorary members, 21 members elected by the general body of the chamber, and 12 deputies from the associations. The following are the members of the council:

CHARLES ROBERTSON, Esq, President

W J TOMLINSON, and J T DANSON, Esqrs, Vice-Presidents

ROBT. TRONSON, Esq, Secretary

The Members of Parliament for the Borough and the Southern Division of the County, *ex officio*

The Mayor of Liverpool, *ex officio*

John Aikin, Esq
Thomas Bouch, Esq
John Bald, Esq
Francis Boult, Esq
F A Clint, Fsq
C J Corbally, Esq, (Treasurer)
Kirkman Finlay, Esq
Robert Gill, Esq
Bernard Hall, Esq
C R Hall, Esq
C Holland, Esq
T D Hornby, Esq
R Hutchison, Esq
R W Kelly, Esq
Charles S Parker, Esq
C E Rawlins, Jun, Esq
R Sheil, Esq
Edward Tennant, Esq

The following is a list of the deputies from the various associations:

African Association.....Thomas Harrison, Esq
American Chamber of Commerce.....C W H Pickering, Esq
Corn Trade Association .....F Maxwell, Esq
Cotton Brokers' Association .....James Ryley, Esq
East India and China Association.....R Duckworth, Esq
General Brokers' Association.....H Royds, Esq
Protection of Wrecks Committee.....Thomas Gair, Esq
Shipowners' Association ....S R Graves, Esq
Warehouse-keepers' Association .....Thomas Dover, Esq
West India Association .....G Booker, Esq
Wine and Spirit Association .....J N Moore, Esq

The following gentlemen have filled the office of president since the establishment of the chamber, viz.:

Thomas B. Horsfall Esq, M.P .....1850 & 1851
Hugh Hornby, Esq.....1852
Francis Shand, Esq.....1853
Thomas Bouch, Esq..... 1854
Edward Heath, Esq.....1855
Charles Holland, Esq.....1856
John Torr, Esq.....1857
Christopher Bushell, Esq..... 1858

SHIPOWNERS' ASSOCIATION.

Each of the associations enumerated above has an independent organization, and an independent action, in matters affecting its own branch of the public interest.

The Shipowners' Association represents a great local interest, possessed of nearly a million tons of shipping (953,955 tons, at the close of 1858). This shipping is of the aggregate value of at least £20,000,000, and forms one of the principal branches of the mercantile

marine, the main support of England's naval greatness, and national independence. The affairs of this great interest are always of importance, and never more so than at the present time. The officers of the Liverpool Shipowners' Association are:

S R Graves, Esq, Chairman | Mr T Carson, Secretary and Treasurer
Office, 2, Talbot Chambers, Fenwick Street

STEAM-SHIP OWNERS' ASSOCIATION.

The prodigious growth of the steam shipping interest, has induced the steam-ship owners of Liverpool to form an independent association, for the management of their affairs. As already mentioned, the steam tonnage paying dock dues in the port of Liverpool amounts to 1,600,000 tons a year, which is one-third of the whole tonnage of the port. The following are the officers of the association:

Mr C Mac Iver, Chairman | Mr A T Squarey, Secretary
Office, 1, Exchange-street West

AMERICAN CHAMBER OF COMMERCE.

The American Chamber of Commerce has the management and direction of an immense branch of the commerce of the port, which gives employment to upwards of a million tons of shipping, both in the import and the export trade, which pays one-third of the dock dues, and forms fully one-third of the trade of the port. The officers of this association are:

C W H Pickering, Esq, President
Henry Stolterfoht, Esq, Treasurer | Mr G J Duncan, Secretary
Office, 1, Exchange Buildings

EAST INDIA AND CHINA ASSOCIATION.

The East India and China Association represents a branch of commerce which has already attained to the position of the second in the port, and which has increased more rapidly during the last five years than it ever did at any previous time. This trade now pays nearly £50,000 a year to the dock revenue. The officers of the East India and China Association are:

Peter Ewart, Esq, Chairman
Mr J G Livingston, Treasurer | Mr T M Myers, Secretary
Office, 1, Exchange Buildings

COTTON BROKERS' ASSOCIATION.

The Cotton Brokers' Association represents all matters affecting the purchase and sale of the great staple of the port, an article which involves transactions of the amount of £30,000,000 a year, conducted with a promptitude, clearness, and integrity never surpassed in the annals of commerce. Though all the arrangements are made verbally and rest on honour alone, disputes are almost unknown, and repudiation entirely so. The officers of the association for the present year are:

Mr Studley Martin, Secretary | Mr Rogers Waterhouse, Treasurer

GENERAL BROKERS' ASSOCIATION.

The transactions of the general brokers extend to nearly all the articles imported, and affect values to the extent of £10,000,000 to £15,000,000 a year. They also

are conducted with extraordinary promptitude and regularity. The officers of this association are :

Henry Royds, Esq, Chairman
Mr John R Pattinson, Treasurer | Mr T M Myers, Secretary

CORN TRADE ASSOCIATION.

The corn trade has a separate organisation, and forms a large and rapidly increasing branch of the commerce of the port. Being concerned in the purchase and sale of the first of all the necessaries of life, there is no assignable limit to its increase.

Mr George Thompson, Treasurer

AFRICAN ASSOCIATION.

The African trade, especially in the great article of palm oil, has grown rapidly of late years, as will be seen from the particulars given in an earlier part of this work ; and will gain additional importance from the introduction of steam navigation on the African coast.

Thomas Berry Horsfall, Esq, M.P., Chairman
Mr T M Myers, Secretary Office, 1, Exchange Buildings
Mr Edward Hatton, Treasurer

WEST INDIA ASSOCIATION.

The West India Association is one of the oldest commercial associations of the port. It represents a trade which has passed through great difficulties, from the dearness and deficiency of labour in the British West Indies, and the competition of slavery and the slave trade, but which is still of great national importance, and capable of great extension, under a fairer and freer system of labour.

Mr Peter Wright, Secretary Office, 6, Brunswick Street

BRAZILIAN ASSOCIATION.

The Brazilian Association is not fully organized, but it is connected with a large and increasing trade.

Mr John North, Secretary and Treasurer

UNDERWRITERS' ASSOCIATION.

The Marine Insurance of the port, like its commerce and shipping, is very large, and forms an important branch of business. Its public place of business is in the Underwriters' Room.

Mr Thomas Court, Secretary Office, 21, Exchange Buildings

There are also associations for the protection of warehouse property, which amounts to fully £3,000,000 in value; and for other purposes connected with trade.

THE LIVERPOOL CUSTOM-HOUSE.

Upwards of £3,600,000 per annum of the national revenue is collected at the Liverpool Custom-house. This, though a considerable sum, is only one-third of the amount collected in London. The difference arises from the fact of the mass of the goods imported into Liverpool being raw materials and prime necessaries of life, which are free from duty; whilst the mass of the goods imported into London are articles of secondary necessity, comforts, and luxuries, which are all very heavily taxed. The affairs of the Liverpool Custom-house are conducted with great promptitude and courtesy, and with a sincere desire at once

to do justice to the national revenue and to the commerce of the country, under the superintendence of the following gentlemen:

S Price Edwards, Esq, Collector
William G Stewart, Esq, Controller
John Cockshott, Esq, Inspector-General
Isaac G Thom, Esq, Controller of Warehouse Accounts

EDUCATION IN LIVERPOOL.

There are various public, as well as private institutions in Liverpool, for the promotion of knowledge and education. Amongst them are the following:

THE COLLEGIATE INSTITUTION.

This institution is not a school, but a group of three distinct schools, adapted for three different ranks of life. The arrangements of the building are such, that the schools, though under one superintendence, are kept entirely separate from one another. There are also three play-grounds and three dining-rooms.

The lower school supplies an English education, with the elements of French and mathematics. In the middle school Latin and French, and elementary mathematics are fully taught. The upper school prepares young men for the universities, and has also a "Modern Division," in which German takes the place of Greek, and provision is made for the teaching of natural history and natural philosophy.

The institution is self-supporting, and its finances are in a flourishing condition. The fees in the upper, middle, and lower schools are twenty-two guineas, eleven guineas,

and four and a-half guineas respectively. There are no endowments, except in the form of exhibitions and scholarships, open to competition. The latter give free education in the schools; the former, of which one is annually vacant, of the value of £40 or £50, are tenable for three or four years at the university.

The institution is recognised as a Government School of Art, and thus, besides the advantages hereby derived to its three schools, it is enabled to supply instruction in drawing to a large number of parochial schools in Liverpool. There are evening classes, not only for art, but for mathematics, arithmetic, English, classics, and French. Public lectures are occasionally given in the institution.

The numbers in the three day schools (excluding the evening classes) are at present about 750, viz., about 150 in the upper school, 250 in the middle, and 350 in the lower. All the masters are allowed to take boarders.

All arrangements which affect teaching and discipline are placed absolutely in the hands of the principal, who has the power of appointing and removing all the masters. The principal is appointed (and removed, if necessary) by the directors, who manage the general financial concerns of the institution, and who also appoint the secretary. The directors are chosen by the life governors, who consisted in the first place of the hundred gentlemen who first contributed £100, and who annually fill up all vacancies in their body. The Bishop of Chester is visitor.

The basis, as regards religion, on which the institution rests, is as follows:—That religious teaching and training, according to the doctrine and discipline of the Church of England, are combined with the ordinary school work,—

that all officers of the institution, (except the teachers of foreign languages,) must be members of the Church of England,—that prayer and the reading of Scripture form part of the daily occupation of the schools,—but that the children of Nonconformists may be exempted, at the request of their parents and guardians, from learning the Church catechism.

The practical working of this system is the subject of some remarks in a paper contributed by the present Principal, to the Transactions for 1858 of the Association for the Promotion of Social Science.

The building, designed by W. Elmes, the architect of St. George's Hall, was raised entirely by private subscriptions, at a cost of about £35,000, most of which was paid at the time of its erection, the rest more recently. The schools were first opened at the beginning of 1843.

The first principal was the Rev. W. J. Conybeare. The present principal is the Rev. J. S. Howson. These two gentlemen, the joint authors of "The Life and Epistles of St. Paul," took double first class honours in the same year at Cambridge.

THE LIVERPOOL INSTITUTE.

This establishment for the promotion of science and learning, was opened in the year 1825. It includes, or is connected with, several seminaries of education.

The first of these is the High School, in which the pupils are prepared for the learned professions, for civil service appointments, for commerce, and for university studies.

The Commercial School, also connected with it, is designed to communicate a sound English education, on very moderate terms.

The Girls' School, is designed to afford a liberal education to young ladies.

The Evening School is intended to afford to those who are occupied in the day, the advantages of intruction in their leisure hours.

The Drawing Schools of the Liverpool Institute form one of the Government Schools of Art.

The following gentlemen are the officers of the Liverpool Institute :

James Mulleneux, Esq, President | Christopher H Jones, Treasurer
Mr Astrup Cariss, Secretary

The Liverpool School of Art attached to the Liverpool Institute, affords instruction in drawing, painting, and modelling. Classes for ladies, meet at mid-day, and for gentlemen and artizans, in the evening.

QUEEN'S COLLEGE.

This institution, in connection with the University of London, was opened in the year 1857. Its principal object is to afford facilities for obtaining the degrees of the University of London ; but its course of study is so liberal and comprehensive, as to be adapted to all the branches of professional life, and to examinations for the civil service. The following gentlemen are the officers and professors of Queen's College :

President of the Senate, Wm. Brown, Esq., M.P.
Vice-Presidents, G Holt, Esq, and J Dickenson, Esq, M.D.,F.R.S., &c.
Secretary, Mr Astrup Cariss

The Liverpool Ladies' College was established with a view of enabling young ladies to follow systematically, under able professors, any branches of knowledge usually pursued in school education.

ACCOMMODATION FOR RELIGIOUS WORSHIP.

According to a statement laid before the Society for Social Science, at its meeting in Liverpool, by Dr. Hume, there is accommodation in the churches of Liverpool for 55,216 persons, at one and the same time, and the number of persons who use that accommodation, more or less frequently, is 98,350. According to the same authority, the accommodation for Protestant Dissenters at one and the same time is sufficient for 30,377, but about 55,415 persons avail themselves of that accommodation more or less frequently. The number of Roman Catholics in Liverpool is stated by Dr. Hume to be 98,820, and they are in general well supplied with religious accommodation, their mode of religious worship rendering the same chapels available for several successive congregations, in the same day. Five-sixths of the church accommodation of Liverpool has been furnished by the Town Council, or the spontaneous zeal of individual churchmen; and the whole of that used by Protestant Dissenters and Roman Catholics has been furnished by the members of those communities. The amount of accommodation is still far from being equal to the wants of the population, but few years pass in which additional places of worship are not erected.

SAILORS' HOME, REGISTRY, AND SAVINGS' BANK.

This most valuable institution, the foundation stone of which was laid by H.R.H. the PRINCE CONSORT, and which is under the immediate patronage of HER MAJESTY THE QUEEN, was established in the year 1844, for the purpose of affording to the numerous seamen who frequent the port of Liverpool, and who, like all sailors on shore, are especially liable to imposition, comfortable board, respectable lodging, and, in case of need, medical attendance, all at a reasonable cost. A savings' bank, a reading room, a library, and nautical schools, are established in connexion with the Sailors' Home. A registry of the characters and services of seamen is kept at this institution, the effect of which is to secure the steady and clever seamen prompt employment by the most respectable shipowners of the port, and wages proportioned to their merits. James Tyrer, Esq., is treasurer of the Sailors' Home; Mr. Richard Tinley, superintendent; and Mr. Thomas Hanmer, secretary.

LOCAL MARINE BOARD.

This institution, established by act of parliament, for the purpose of insuring a competent knowledge of navigation and seamanship, in all persons aspiring to the responsible position of officers in the mercantile marine, holds its meetings, and has its board-room and offices, at the Sailors' Home. The examiners of the Local Marine Board are Mr. J. T. Towson, in navigation; Mr. Norman McLeod, in seamanship; and Mr. E. Ross, in steam. The

mayor of Liverpool and the stipendiary magistrate, John Smith Mansfield, Esq., are members of the board, *ex officio*, which is further composed of five members, elected by the shipowners. and four members nominated by the Board of Trade. The following gentlemen are the present members:

The Mayor of Liverpool, *ex officio*
John Smith Mansfield, Esq., Stipendiary Magistrate, *ex officio*

Samuel R. Graves, Esq
Wm. J. Tomlinson, Esq
T. M. Blythe, Esq
John Lockett, Esq
Wm. Inman, Esq
George Kendall, Esq
Joseph Mondell, Esq
Charles MacIver, Esq
James Smith, Esq

TENEMENTS AND VOTERS IN LIVERPOOL.

A return of the present session of parliament gives the following facts with regard to the tenants and voters at Liverpool:—The population of the borough of Liverpool, at the time of the last census, in 1851, was 375,955. The number of members returned is two. The number of voters on the register at the present time is 18,855; but a note appended to the return states that the actual number of persons entitled to vote is about 16,555. The whole number of tenements, including houses, shops, warehouses, &c., rated to the poor in the borough of Liverpool, is 74,099. Of these the number rated at £10 and upwards is 42,478; the number rated from £5 to £10 is 29,836; the number from £4 to £5 is 1,323; the number from £3 to £4 is 368; and the number under £3 is 94.

GROWTH OF BIRKENHEAD.

At the commencement of the present century, when the first census was taken, in the year 1801, Birkenhead was a

small hamlet, containing 110 inhabitants; and Woodside was a ferry house, on the river Mersey. A pleasant wood of oak trees stretched along the side of the river, from Woodside and Birkenhead, and probably gave the former place its name, as the latter was named from the wood of birch trees, which once covered the promontory on which it stands. There are many persons still alive who remember the time when there were not half-a-dozen houses between Holt Hill, which now overlooks the town of Birkenhead, and the river Mersey. Between the first census, in 1801, and the second census, in 1811, the population of Birkenhead decreased from 110 to 105 inhabitants; and from 1811 to the third census, in 1821, it only increased from 105 to 200. Up to that time there had been no means of communication across the river, except sailing boats, and the landing was so bad, on both sides of the river, that men, women, and children, had often to be carried from the boats to the shore, through the mud and over the stones, in the arms of the boatmen. On the 4th of April, 1817, the Etna, the first ferry steamer, began to ply on the Mersey, and from that day the population of Liverpool began to spread itself over the opposite shore of the river. It was not, however, till the year 1819 that the foundation of the first church, built at Birkenhead in modern times, was laid in the grounds of the ancient Priory. From that time the population began to increase rapidly, hundreds of families passing over from Liverpool, allured by pleasant country scenery, fine river views, and the wonderful ease with which they were able to pass from the bustle of the town to the quietness of the country. This quietness soon, however, began to pass away with the influx of population,

for in the year 1841 the number of houses had increased to 1,256, and the number of inhabitants to 8,227. In 1843 the first Birkenhead Dock Act was passed, and was followed by a rapid increase of the population, which has continued to the present day. At the date of the last census, in 1851, the population of Birkenhead had increased to 24,000 inhabitants, and it is now estimated by the officers of the township at 35,000. In all the Reform Bills, recently promulgated, it is proposed that Birkenhead should return a member to Parliament.

THE COMMISSIONERS OF BIRKENHEAD.

Birkenhead is governed by a board of Commissioners, The members hold office for three years ; and are elected by the ratepayers of the township. The following are the Commissioners of Birkenhead at the present time :

J. Laird, Esq, Chairman ; G. Rae, Esq, Deputy-Chairman

Mr. Stainton Bailiff
Mr. Henry Bell
Mr. Thomas Bradley
Mr. E. Gardner Willoughby
Mr. Charles Cook
Mr. T. B. Golborne
Mr. W. T. Keightley
Mr. Charles Olives Baylis
Mr. John Laird
Mr. H. K. Aspinall
Mr. George Rae
Mr. John Alexander Barnett
Mr. George Meakin
Mr. Charles Verelst
Mr. James Macdonald
Mr. William Hind
Mr. George Harrison
Mr. James M'Whirter
Mr. Thomas Stanton Eddowes
Mr. Robert J. Hardman
Mr. William M'Gill

Office, Hamilton-square.

THE COMMISSIONERS OF WALLASEY.

The rapid increase of population in the Townships of Wallasey and Seacombe, has rendered it necessary to form another local government on the Cheshire side of the Mersey, for the administration of the affairs of the rapidly improving and increasing district, extending from the north side of Wallasey Pool to the sea at New Brighton.

Thirty years ago, Seacombe, Wallasey, Liscard, and the Magazines, were small villages, of one to two hundred inhabitants; and Egremont and New Brighton did not then exist, even in name. At the present time the population amounts to several thousands, and is rapidly increasing.

The following are the officers of the Wallasey Board:

Mr T. Keay Hassall, Law Clerk | Mr George Arkle, Treasurer
Mr James T. Lea, Surveyor and Inspector of Nuisances
Mr T. Somerville Jones, Accountant

The overflowing of the population of Liverpool along the sea shore to the north of the town, joined to the aboriginal residents, has brought together a population of several thousand inhabitants, which has also organised for itself a local government, under the Waterloo and Seaforth Board of Health.

The forming of a large dock for sea going ships at Garston, and the establishing of a line of railway to that point, with other causes, have also brought together a considerable and rapidly increasing population in that part of the port, under a Local Board of Health.

COMMENCEMENT OF THE TRADE OF 1859.

It appears from the returns of the Custom-house that the declared value of the goods exported from Liverpool in the month of January, 1859, was £5,261,789. This is an increase of £1,802,672, on comparison with the exports of January, 1858, which amounted to £3,438,107. If the value of the exports, in the first month of 1859, is to be taken as a standard to measure the exports of the succeeding months of the year, the value of the exports of 1859

will greatly surpass those of any preceding year. The greatest value of the exports of Liverpool, in any previous year, was £55,173,756 in 1857; but the exports of January, 1859, are at the rate of upwards of £63,000,000 a year.

The goods exported from Liverpool in January, 1859 were sent to the following countries and regions, according to the Custom-house classification:

Asia (India and China,) and Africa	£1,367,948
Australia and New Zealand	217,366
North of Europe (Baltic)	1,147
South of Europe	1,027,848
British America and West Indies	173,166
United States	1,770,017
South America	704,305
	£5,261,789

Two of the items in the above list are very much below the average, namely, those which relate to British America, and the Baltic. Those two branches of trade are almost closed in the winter months, by the intense cold which freezes not merely the rivers and canals, but even the ports and harbours. It is not until the spring and summer months that the extent of those trades is perceived. The other branches of trade form probably a fair average of the trade of the year: but there is no reason to think that they do anything more. It will be seen that the trade with the United States still takes the lead of all others, but that that of India and China approaches near to it, whilst the trades with the South of Europe (chiefly the Mediterranean) and South America, are also very large.

The following table of the declared value of exportation

from the whole of the United Kingdom, will show how large a proportion of the whole passes through the port of Liverpool :

DECLARED VALUE OF EXPORTATIONS.

	Month Ending Jan. 31.			
	1858.	1859.	Increase.	Decrease
Apparel and Slops.....	£149,153	£159,755	£10,602	£ —
Beer and Ale	161,103	170,294	9,191	—
Books	29,488	29,341	—	147
Butter	42,724	56,538	13,814	—
Candles	9,538	10,589	1,051	—
Cheese	4,566	6,655	2,089	—
Coals and Culm	153,722	156,426	2,704	—
Cordage	9,582	9,275	—	307
Cottons	2,150,779	3,159,919	1,009,140	—
Cotton Yarns	636,342	698,804	62,462	—
Earthenware	76,084	90,708	14,624	—
Fish	10,094	21,099	11,005	—
Furniture	18,917	13,582	—	5,335
Glass	46,157	41,809	—	4,348
Haberdashery.....	215,740	295,060	79,320	—
Hardwares	227,950	268,790	40,840	—
Leather	147,091	130,031	—	17,060
Linens	333,239	394,114	60,875	—
Linen Yarn	88,441	138,213	49,772	—
Machinery	239,822	185,453	—	54,369
Iron and Steel	590,810	704,685	113,875	—
Copper and Brass	169,236	260,392	91,156	—
Lead	27,657	44,120	16,463	—
Tin	69,779	112,720	42,941	—
Oil Seed	50,033	61,918	11,885	—
Painters' Colours	15,942	26,024	10,082	—
Pickles and Sauces ...	18,483	23,689	5,206	—
Plate and Jewellery ...	24,821	37,239	12,418	—
Salt	10,833	11,329	496	—
Silks.....	111,042	204,209	93,167	—
Soap.....	12,603	8,629	—	3,974
Soda.....	39,177	70,045	30,868	—
Spirits	19,644	18,665	—	979
Stationery	52,747	48,513	—	4,234
Sugar, Refined	14,904	31,129	16,225	—
Wool	41,098	21,860	—	19,238
Woollens.....	584,610	894,472	309,862	—
Woollen Yarn.....	119,631	180,736	61,105	—
Unenumerated Articles	498,018	796,594	298,576	—
	£7,221,600	£9,593,423		

"Everywhere else, all the power and wealth of autocracy must avow themselves vanquished and eclipsed by that incomparable fecundity of private industry, which, in our time, without having been either incited or aided by the State, has hollowed out in the port of Liverpool, floating docks six times as vast as those of Cherbourg."—*Montalembert on Constitutional Liberty.*

PART II.

THE PORT OF LIVERPOOL, AND THE HARBOUR OF THE MERSEY.

THERE are few natural harbours on the west coast of Great Britain sufficiently protected from the stormy winds of the Atlantic, and the rapid currents of the Irish Sea, and at the same time possessed of sufficient depth of water, to receive and shelter the larger class of vessels now employed in the commerce of England. No harbour unless deep enough for vessels of fifteen hundred, two thousand, and three thousand tons, and even greater size and draft of water, is available for the largest class of vessels which now sails under the English and American flags. Harbours of this kind are rare in all parts of the world, and along the western coast of Great Britain, from Milford Haven, in South Wales, to the entrance of the Clyde, a distance of three hundred miles, the estuary of the Mersey is almost the only natural harbour possessed of all these requisites. The rugged coast of Wales, from Milford Haven to the entrance of the river Dee, is lined with lofty mountains, and is indented with deep wide bays, of which those of Cardigan and Carmarthen are best known to, and most dreaded by, seamen. These are open to every wind that blows from the ocean, and the indraft of powerful currents joins with the winds, in driving vessels, that have the misfortune to be drawn within them, on the fatal rocks which line their shores. So great is the want along these coasts, and indeed in every part of the western seas of Great

Britain, of natural harbours, that parliament has expended, or has agreed to expend, a sum of nearly two millions of the public money, in forming a harbour at Holyhead;* and plans are now under consideration, for forming harbours of refuge, at the expense of the nation, at several other points in the western seas.† Neither are the level shores which stretch from the mouth of the river Dee to the head of Morecombe Bay, much better provided with natural harbours than the rugged coasts of Wales; for, although they present to the seaman several wide estuaries, each large enough to receive a numerous fleet of the largest vessels, they are some of them so open to the prevailing winds, others so inaccessible from sand-banks, and all of them, with the exception of the river Mersey, possessed of so small a depth of water, as to be unfit to receive and shelter the immense vessels, which have come into use, for the purposes of commerce, during the last twenty years. The estuary of the Mersey, however, combines in itself the advantages of a natural harbour, moderately well sheltered from the most dangerous winds, with an entrance deep and wide enough to admit the largest vessels, and an area of several thousand acres of water space, everywhere presenting a sufficient depth of water, for them to ride at anchor in safety, in every state of the tide.

The port of Liverpool extends over the whole estuary of the Mersey, from its entrance at the Rock on which the Lighthouse stands, to the highest point reached by the tides, and it also stretches along the coasts of Lancashire and Cheshire, to the entrance of the Ribble and the Dee,

* Financial Accounts for the Year 1858.

† Report on Harbours of Refuge, 1857.

where the ports of Preston and Chester commence. Outside the estuary, along a coast thirty miles in extent, the port is exposed to the violence of all the winds, and is destitute of secure anchorage. The ancient creek of Hoylake, in which large ships formerly lay secure, under the shelter of the Hoyle Banks, has been rendered useless for that purpose, by the encroachment of the sands; and the other parts of the shore present nothing but sandy downs, without a single opening accessible to large vessels. Within the estuary of the Mersey vessels are moderately well protected from the west, the south-west, and the south-east winds, by ranges of hills, rising to the height of from two to three hundred feet. These hills stretch along both sides of the Mersey, extending from the Rock at New Brighton to above Eastham, on the Cheshire side of the river, and from Everton to Woolton and Garston, on the other. A much higher range of hills rises on the upper shores of the estuary, extending from Helsby Hill to Runcorn, and this also in some degree breaks the force of the winds, from the south and east. The port, however, lies very open to the north and the north-east winds; but fortunately those are neither the prevailing winds, nor those which blow with the greatest force, on the shores of Lancashire. This is seen from the results of a series of observations, on the force and direction of the winds, made at the Liverpool Observatory, during the six years ending the 31st December, 1857. The direction and force of the wind, as deduced from hourly averages of observations, taken during the whole of that period, with Osler's self-registering anemometer, were as follows:—The wind blew from the north-east quarter sixty days in the year, with an average force of

nearly eight miles an hour (7.8); from the south-east one hundred and sixteen days, with a force of eleven miles an hour; from the south-west seventy-seven days, with a force of nearly fourteen miles an hour (13.8); and from the north-west one hundred and twelve days, with a force of upwards of fifteen miles an hour. These are the averages of the whole six years, but in the year 1854 the wind blew from the north-west during one hundred and thirty-eight days, with an average velocity of more than seventeen miles an hour, and from the south-west eighty-nine days, with an average velocity of nearly fifteen miles an hour. The above figures show the ordinary force and velocity of the winds on the banks of the Mersey; but in gales from the north-west and the south-west the wind sometimes blows at the rate of forty miles per hour, and in the great storm, on the 25th and 27th December, 1852, it swept over the port at the rate of seventy-one miles.

The following table shows the average of each of the six years, as well as of the whole, as arranged by Mr. Hartnup, at the Liverpool Observatory:—

Direction and Strength of the Wind, at the Liverpool Observatory, for the Six Years ending the 1st December, 1857.

Summary of the Direction and Hourly Velocity of the Wind. For the Quadrants.

Year	N.-Eastwardly		N.-Westwardly		S.-Eastwardly		S.-Westwardly		Calms
	Days	Miles ℔ hour	Days	Miles ℔ hour	Days	Miles ℔ hour	Days	Miles ℔ hour	Days
1852	55·0	8·0	92·8	16·2	129·8	11·5	87·6	15·4	0·8
1853	70·1	7·6	108·6	14·8	110·0	11·1	75·2	14·0	1·1
1854	43·9	7·9	138·0	17·9	93·9	10·8	89·0	14·9	0·2
1855	75·0	7·5	120·2	14·7	109·4	11·0	59·9	13·0	0·5
1856	59·3	8·1	118·9	14·5	119·8	10·9	67·5	13·1	0·5
1857	56·9	7·7	92·9	13·5	130·9	10·9	84·1	12·5	0·2
Means.	60·0	7·8	111·9	15·4	115·6	11·0	77·2	13·8	0·6

For the Semi-Circles.

Year	NORTH AND SOUTH.					EAST AND WEST.				
	Northwardly		Southwardly		Calm	Eastwardly		Westwardly		Calm
	Days	Miles ℔ hour	Days	Miles ℔ hour	Days	Days	Miles ℔ hour	Days	Miles ℔ hour	Days
1852	147·8	13·0	217·4	13·1	0·8	184·8	10·4	180·4	15·8	0·8
1853	178·7	12·0	185·2	12·3	1·1	180·1	9·7	183·8	14·5	1·1
1854	181·9	15·5	182·9	12·8	0·2	137·8	9·9	227·0	16·7	0·2
1855	195·2	11·1	169·3	11·7	0·5	184·4	9·6	180·1	14·1	0·5
1856	178·2	12·4	187·3	11·7	0·5	179·1	10·0	186·4	14·0	0·5
1857	149·8	11·3	215·0	11·6	0·2	187·8	10·0	177·0	13·1	0·2
Means	171·9	12·6	192·9	12·2	0·6	175·7	9·9	189·1	14·7	0·6

The immense sand banks which stretch along the coasts of Cheshire and Lancashire, render those coasts inaccessible to large vessels, except through a few narrow channels. Along the greater part of the coast, the sand banks are seen at low water, rising above the level of the sea, in some places to the height of from twenty to thirty feet, presenting the aspect of a waste of sand, deserted by all living creatures, except flocks of sea birds, which pick up a subsistence on the sand, or find it by fishing in the neighbouring shallows. At low water the only approach to the shore is through channels, which then become nearly dry; but no sooner does the tide begin to rise, than these channels are changed to great arms of the sea, into which the water rises rapidly, and soon spreads over and covers the banks. Then it is that they become dangerous to navigators, presenting everywhere either foaming breakers or treacherous shallows, in which vessels, unless well directed and piloted, are drawn and lost. These banks have all been raised from the bottom of the sea, by the action of the tides and currents, and the general effect of the action of

the sea is to raise them higher. It is only at a few points that the force of the tides, as they rush from or to the sea, through the deeper and wider estuaries, is of sufficient strength, to preserve channels deep and wide enough for the purposes of navigation, from the sea into the bays and estuaries of the adjoining coast.

The mischief caused by these vast sand banks is not confined to the forming of dangerous bars and narrow passages, at the entrance of the neighbouring harbours. The sand of which they are composed is so loose, that much of it is stirred up and set in motion, as the tides rise. Hence the tidal wave flows into the estuaries, bearing along with it large quantities of sand. This it carries into their inmost recesses, and when the impulse which urges the tide forward loses its force, a large portion of it sinks to the bottom. The effect of this constant deposit of sand, continued through a long course of ages, has been to render several of the estuaries on this coast too shallow to receive large vessels, even at flood tide, and to convert them into vast wastes of sand at the ebb. Even in those in which the tendency of the sand to accumulate is partially checked by other natural causes, the effect has been to form extensive sand banks, in the higher parts of the estuaries.

The quantity of sand set in motion by the advancing tides, at the entrance of the river Mersey is fully as great as at any other point on the coast. It amounts, according to a calculation laid before the British Association in 1837, by Captain Denham, then marine surveyor of the port, to twenty-nine cubic inches of solid matter, to every cubic yard of tidal water carried into the estuary.* Fortunately

* Report of Transactions of the British Association, 1837, p. 85.

the formation of the entrance to the Mersey is such as to cause the tide to rush into the river, and to sweep through the harbour, with a force which carries the sand, borne along by it, into the higher part of the estuary, and prevents any very serious amount of deposit, in the lower and narrower part, forming the harbour of Liverpool. The vertical rise of the tide, at the entrance of the Mersey, is from thirty to thirty-three and a half feet at the highest spring tides, and it passes through the narrowest part of the river, between Seacombe and Prince's Dock, at a speed varying from $4\frac{1}{2}$ to $5\frac{1}{2}$ miles per hour, according to the nature of the tide. There is scarcely any deposit of sand in the narrowest part of the river, but at a little distance above that point, where the stream begins to widen, the great deposit of sand, well known as Pluckington Bank, commences. It is ascertained that the increased force of the tide, caused by the narrowing and straightening of the channel, is producing a considerable effect on this bank; and likewise that the strength of the tide is so great, in the middle of the stream, as to prevent any deposit taking place there. Hence the deep water continues above New Ferry and the Dingle, and it is in the upper part of the harbour, between Tranmere and Rock Ferry, that the best anchorage exists, which has been long known by the name of the Sloyne. Above Garston the Mersey is filled with sand banks, which are seen at low water, rising to a height of from 10 to 15, and even 20 feet. These, however, are covered by the tide at high water, and the tidal wave ascends nearly twenty miles further up the estuary, running into the river Weaver, beyond Frodsham, and up the river Mersey, for some miles above Warrington.

According to the calculations of Captain Denham, the quantity of tidal water which enters the Mersey, at spring tides, is seven hundred and seventy-four millions of cubic yards, and at neap two hundred and ninety-nine millions, making an average of five hundred and thirty-five millions of cubic yards. When the tide is full, this immense mass of water forms a great natural reservoir, with the appearance of a noble lake, twenty miles in length, and from two to five miles in breadth. On the turn of the tide this vast mass of water, in flowing back to the sea, carries along with it the fresh water brought down from the interior. At first its motion is slow, but as it descends towards the sea the motion increases steadily, and before it reaches the narrow part of the estuary it has attained a speed of three to four miles an hour. As it flows through the narrowest part of the estuary, within the harbour of Liverpool, its speed continues to increase until it attains a rate of between five and six miles an hour. The power of this great natural sluice not only scours out the harbour, but strikes upon the banks, at the entrance of the river, with sufficient force to clear a wide channel into the sea, in which channel there is never less than twelve feet at low water, and at high water sufficient depth of water to admit the largest ships that traverse the ocean. Such is the great natural process by which the harbour of the Mersey, and the channels leading into it, have hitherto been kept open, and by which they may be kept open for ages to come, if nothing be done in the interior of the river, to diminish the quantity of water which the rising and falling tides force through them more than fourteen hundred times every year.

THE CONSERVANCY OF THE MERSEY.

The object of the Mersey Conservancy Act of 1842 was to create a permanent board of conservators, armed with sufficient powers to prevent encroachments on the shores of the Mersey, to remove all obstructions in the stream, produced by natural or accidental causes, and to insure, that all public works, formed below the level of high water, should be planned and executed in such a manner as to render them useful, if possible, and at all events, not detrimental, to the paramount object of preserving the entrances to the port and the port itself.*

The Mersey Conservancy Board, as constituted by the Act of 1842, consists of three commissioners of conservancy. These are the First Lord of the Admiralty, the Chancellor of the Duchy of Lancaster, and the Chief Commissioner of her Majesty's Woods and Forests, for the time being. The act provides that the conservancy of the river Mersey, and of its banks and shores, from Warrington and Frodsham bridges to the sea, and of the entrances to the river, in the sea, "as the same conservancy is vested in her Majesty, the Queen, in right of her Crown and of her Duchy of Lancaster, or in the Lord High Admiral, or Commissioners for executing the office of Lord High Admiral, of the United Kingdom," shall be vested in the three commissioners named above, who shall be entitled "Commissioners for the Conservancy of the River Mersey."

These commissioners are authorised, by the Act, to appoint an acting conservator, whose duty is stated in the Act to be, to survey and inspect the river Mersey, within

* An Act for better preserving the Navigation of the River Mersey, 30th July, 1842.

the limits mentioned above, and to report to the commissioners, upon the state of the navigation, specifying all the impediments, nuisances, and encroachments that exist, and how and by whom they have been created. The Act further provides that, after the 1st of July, 1842, no quay, wharf, jetty, breast-work, or embankment, shall be erected, in the bed, or on the shores of the Mersey, below high water mark, of a tide rising to the height of 21 feet above the Old Dock Sill, (which is nearly 30 feet above low water,) without two months' notice to the acting conservator, and also provides that any work constructed without such notice, shall be a nuisance, and may be abated and removed as such. The act further empowers the commissioners of conservancy to commence or defend any action at law, or in equity, which they may consider necessary, for the carrying out the purposes of the act, and provides that they shall be indemnified by the mayor, alderman, and burgesses of Liverpool, and by the trustees of the dock estate, "from all costs, charges, or damages which they may incur, with regard to the surveying and inspection of the river."

No change was made by the Mersey Docks and Harbour Acts of 1857 and 1858, either in the constitution of the Mersey Conservancy Board, as established by the act of 1842, or in the powers conferred on the Conservancy Commissioners, by that act. The only change made by those acts, in relation to that act, was as to the source from which the funds for carrying out its objects should in future be supplied. The corporation of Liverpool, who were the promoters of the act of 1842, previously supplied the funds for that purpose, in the proportion of two-thirds from their

borough fund, and one-third from the funds of the dock estate, of which they were trustees. By the Mersey Docks and Harbour Act of 1857, the funds are in future to be supplied from the estate of the Mersey Docks and Harbour Board. It is only just to mention that the corporation of Liverpool not only paid the cost of obtaining the Mersey Conservancy Act, but that they have also expended upwards of £50,000, in promoting the objects for which that Act was passed.

The Mersey Conservancy Act has now been in force for upwards of sixteen years, during the greater portion of which time Rear-Admiral George Evans has held the office of acting conservator; and it is very satisfactory to be able to state, at the end of that period, that the condition of the port is considerably better than it was when the act passed. Since that time no encroachments on the bed or shores of the river, by private individuals, have been allowed; all obstructions in the channels, produced by wrecks or other causes, have been promptly removed; and the utmost care has been taken, in planning the immense public works which have been constructed on both sides of the Mersey, that they should be formed, in such a manner as not merely to preserve, but to increase as much as possible, the action of the tide on the harbour and on the passages leading to it. This is clearly shown as relates to the river, by a comparison of the results of a careful survey of the river Mersey, made in the year 1857, with those of similar survey made in the year 1822; and as relates to the entrances to the river, it is shown by a comparison of the chart of the approaches to the river, published by Lieut. Murray T. Parks, marine surveyor to the port, in the year 1858, with older charts.

COMPARATIVE STATE OF THE PORT AND HARBOUR OF LIVERPOOL, IN THE YEARS 1822 AND 1857.

The report of Mr. James Walker, and Mr. John B. Hartley, on the condition of the river Mersey, is important, both as showing the present state of the navigation of the port and harbour, and also as showing the changes which have taken place in both, during the last thirty-seven years, that is, since the survey which was made for the corporation, by the late Mr. Giles, in the year 1822. The report of Mr. Walker and Mr. J. B. Hartley, is dated 21st of December, 1857.

On comparing the facts which were ascertained, and the measurements which were made in the year 1857, with those which were ascertained and made in 1822, it is found, that the following changes have taken place, during the interval which elapsed between the two surveys.

It appears, in the first place, that the course of the great tidal wave, which flows through the port and harbour, at flood and ebb, has become much straighter and more direct than it was in the year 1822. At that time a much larger portion of the water, which the tide forces into the Mersey, found its way to the entrance of the river, by winding round the banks, or by flowing over them, and a much smaller portion by means of the channels which lead through the midst of the banks, and directly into the entrance of the river. Thirty-seven years ago, the Queen's Channel, and the Victoria Channel, which now form the main entrances into the Mersey, and which run right through the banks, either did not exist at all, or were so much shallower than they are at present, as to be use-

less for the purposes of navigation. The tidal current is now more concentrated in those channels, and consequently their depth is greater. At the same time the height of the banks has increased, particularly that of the Great Burbo Bank, which lies between the Victoria Channel and the Horse and Rock Channels. The latter channels wind between the Great Burbo Bank and the Cheshire shore, and have become much narrower and shallower, whilst the Victoria Channel and the Queen's Channel have become so much deeper and wider. The increase in the height of the Great Burbo Bank is 6, 8, and 10 feet, and even more, within the last thirty-seven years; and the changes in the Rock Channel have been even greater. Thirty-seven years ago the narrowest part of the Rock Channel, at low water of spring tides, was 1,300 feet wide, whilst it is now only 400 feet wide. The Hoylake Channel into the Dee is also entirely filled up, so that where there was 6 feet water at low water, of spring tides, it now dries 16 feet (a difference of 22 feet.) At the same time the main entrance to the Horse Channel, between the Dove Spit and the North Spit, has narrowed, from 1,200 yards to 700 yards wide.

In consequence of these changes or at least simultaneously with them, the force of the flood tide setting eastwardly, and almost at right angles, into the Mersey, has diminished, while that from the northward which sets in directly, has increased, so that the action of flood through the Rock Channel, is now too weak to force the tide over to the eastward, into Bootle Bay, as heretofore. It now flows truer, following the straight line, and causing a greater velocity in the current of the tide, at its entrance into the river,

As respects the direction of the tidal current below and opposite to Liverpool, it appears that the main current of flood now keeps parallel to the west, or Cheshire shore, from the entrance of the river, where it is about 500 yards from that shore, in nearly a straight course up to Birkenhead. There it turns towards the centre of the river, and flows straight forward into the wider part of the estuary, by a passage, which the flood or ebb stream has opened for itself, through nearly the middle of one of the main banks, in the open part of the estuary, known as "Devil's Bank." In 1822, on the contrary, the main current, or axis, of flood tide, (and in a reverse direction, that of ebb also,) shot off from the entrance of the river, when it was 500 yards from the Cheshire shore, across towards the Lancashire side, until, when opposite to the present Clarence Dock, it came within 250 yards of the latter. It then returned across towards the Cheshire shore, and opposite to Birkenhead it was only 270 yards from that shore. Thence it crossed again over to the Lancashire side, went close to the shore, between Devil's Bank and Knott's Hole rocks at Dingle Point, and thence into what was then the course of Runcorn Channel. A small tidal channel, also, then kept along the Cheshire shore of the estuary up to Ellesmere Port, and Stanlow Point, near to which it fell into the main stream. These changes, whether in reference to the straightness of the channels or to the depths of the water, may be considered as improvements. Mr. J. R. Wright, who made the survey under the direction of Mr. Walker and Mr. John B. Hartley, was informed by the masters of craft navigating the estuary, that they had never known its channels to be in a better state than at the time when the survey

was made. From causes which will be afterwards referred to, there has been a more direct and undisturbed action of the tides. This has given them sufficient force to make their way by degrees, in a straight line, through the middle of the Devil's Bank, whereas formerly they were deflected round it, to between the south end of the bank and Dingle Point.

On examining the plan of the survey of 1857, it appears that the main set of the ebb as well as flood tide is now through the straight channel, so that the tidal force is more concentrated. In other words, the obstruction, or partial dam, which Devil's Bank formed across the middle of the river is now broken through. That this concentration has taken place in the middle of the stream is shown also by the silting up of the low water channel under the Cheshire shore, that led to Ellesmere port. The stream called Stanlow Pool, which formerly ran close round the rocky point of that name, is now deflected from it into the main channel, leaving Ellesmere port nearly dry at low water. The Weaver navigation has, on the contrary, been benefited by the part of the low water channel called Frodsham River, which formerly ran parallel to the Ince (Cheshire) shore, and kept a separate channel until six miles below Weston Point, now joining the main stream at that point. Another former stream called the Pool Hall Channel is now joined to the main stream; its bed is dry at low water of spring tides, and it can only be used occasionally at high water. In further proof of the same fact a great portion of the flood and ebb water that formerly passed round by Dingle Point, is now retained in the main channel.

Whilst the main stream of the tide through the channel, harbour, and estuary of the Mersey has thus become straighter and more direct, the channels, harbour, and estuary have all become deeper. As already mentioned, the Victoria and the Queen's Channels, either did not exist at all in 1822, or were so shallow at that time that they were not thought of. They are now the best entrances into the port.

Within the harbour, commencing at a point 150 yards north of the jetty at New Brighton, and proceeding upwards to Runcorn, the depth of the river was ascertained in 1857, at forty-one different points, by accurate soundings, and the result of all, except one or two, was to show a considerable increase of depth since 1822. From the mouth of the river to Dingle Point, the increase of depth varied from 7 to 10 feet, in and near the navigable channel. It was not so great above that point, but there was still an increase. Together with this increase of depth, there was also an increase in the area of water surface, amounting to six per cent. in the upper part of the estuary, extending from the narrowest part of the river between Prince's Dock and Seacombe, to Ince, a distance of ten miles up the estuary. This is a considerable increase of area, and shows that the quantity of tidal water which passes up and down at each flood and ebb, and acts upon the sands outside the river, and down to the bar, has increased, although by far the greater proportion of the increase is below low water.

Whilst the quantity of the tidal water has increased, the rate at which it flows into and out of the river has also increased. The observed inclination in the surface of the ebbing tide, above Seacombe, is 1 in 13,000; below Sea-

combe, it is 1 in 6,000, showing that Seacombe acts, in some degree, as a dam, both from its narrowness and shallowness. The depth of the river at Seacombe is only 63 feet, whilst opposite to New Brighton, two miles below Seacombe, it is 93 feet, and opposite to Woodside, one mile above Seacombe, 80 feet. Seacombe may therefore be considered as the throat or gorge of the Mersey, as far as the navigation is concerned, both as being the narrowest part, and also as having a bottom or bed of rock, which the current, though great, cannot remove. Experiments have showed the velocity of the current opposite to Seacombe to be $5\frac{1}{2}$ miles per hour, with high tides, and $4\frac{1}{2}$ miles with ordinary spring tides, which is one mile more than was observed either above or below the Seacombe Narrows. At neap tides the acceleration of the current was half a mile per hour, its velocity at that time being two miles per hour. According to Lieut. Lord's chart of 1849, the velocity at high tides, in the Seacombe Narrows, was $5\frac{1}{4}$ miles.

In considering the causes which have produced these extensive changes, those which naturally suggest themselves are such as have recently taken place in the narrow parts of the river, forming the entrance of the estuary, or on its shores. It appears that in 1822, the embanked or walled side of the river on the east, or Liverpool side, was confined to the space between the south side of what is now Coburg Dock, and the north side of Prince's Basin, in length about 3,000 yards, or less than two miles. This walled or embanked side now extends from the Herculaneum Estate on the south, to the middle of Bootle Bay on the north, a length of about 9,700 yards, or upwards of

five miles. Of this newly-constructed sea wall 4,500 yards is to the north of the dock enclosures, as they existed in 1822. Over this space the tide had at that time full action, spreading freely over the wide space of Bootle Bay and the Mile House Rocks. The river now decreases from a width of 1,800 yards at its mouth, to about 980 yards at the narrows between Seacombe Ferry Pier and the north end of Prince's Dock Pier. The width also of the reclaimed area is much greater at the northern, than at the southern extremity, being 330 yards wide at Prince's Basin, and 900 yards wide at the Bootle, or north end: it there forms an area of about 560 acres, while the southern enclosure is only about 80 acres. On the west, or Cheshire side, also, the water has been excluded from Wallasey Pool, and a river wall 800 yards in length has been built for the Birkenhead Docks. As respects the question of abstractions or enclosures affecting the tidal current opposite Liverpool, the most important is no doubt the reclamation at the north end of the Liverpool Docks, which has prevented the flood-tide from spreading into Bootle Bay, as it did before the enclosure, and has, by confining it to the front of the dock walls straightened the line of its direction, as well as strengthened the current.*

Such are the changes which have taken place in the navigation of the Mersey in the course of the last thirty-seven years. In every respect they show an improvement; and the result of the care and attention which have been given to the river and harbour during that period, is such as to encourage the hope that the new works which are now

* Report to the Corporation of Liverpool, by J. Walker and J. B. Hartley, Esqrs., Civil Engineers, on the River Mersey, 1857.

in course of construction, on the same principle as those already formed, will prove equally beneficial to the navigation of the port.

COMPARATIVE DEPTH OF THE MERSEY IN 1822 AND 1857.

Locality.	Greatest depth in 1822.		Greatest Depth in 1857.	
	Feet.	Inch.	Feet.	Inch.
At the mouth of the river, on the line of section No. 1, opposite New Brighton	67	0	73	0
On line 2, ¼ mile south of No. 1	81	3	93	0
„ 3, opposite Canada Dock	82	0	93	0
„ 4, Ditto	78	6	85	0
„ 5, opposite Huskisson Dock	74	4	77	6
„ 6, opposite Sandon Basin	60	3	67	9
„ 7, opposite Egremont	65	0	65	0
„ 8, opposite Salisbury Dock	72	8	77	0
„ 9, opposite Clarence Dock	72	0	79	6
„ 10, at Seacombe	61	0	65	0
„ 11, opposite Prince's Dock, (north end)	58	0	65	6
„ 12, Ditto (south end)	63	0	71	6
„ 13, opposite George's Dock	65	9	69	6
„ 14, opposite Albert Dock	68	10	80	0
„ 15, opposite Duke's Dock	74	4	80	6
„ 16, opposite Queen's Basin	63	2	78	0
„ 17, opposite Coburg Dock	67	3	78	3
„ 18, opposite Brunswick Dock	62	8	70	6
„ 19, opposite Toxteth Dock	63	6	72	7
„ 20, opposite Harrington Dock	56	2	67	0
„ 21, above Egerton Dock	51	8	60	3
„ 22, above Herculaneum Estate	49	0	57	6
„ 23, above Dingle Point	42	5	46	6

THE NEW SEA WALL FROM SEACOMBE TO EGREMONT.

As a measure of precaution, and to prevent the washing away of the steep banks on the Cheshire side of the river, the Mersey Dock and Harbour Board are at present building a river wall north of Seacombe, (under the provisions of the Mersey Docks and Harbour Act of 1857, sec. 65.)

In a report on this subject presented by Mr. John B. Hartley, the Dock Engineer, to the Works Committee of the Board, on the 18th of March, 1858,—Mr. Hartley said, that the river gradually decreases in width from upwards of 1,800 yards at its mouth, to about 980 yards at the narrows, between Seacombe Ferry Pier and the north end of the Prince's Dock wall. The velocity and momentum which the flood tide has acquired during its passage up from the sea between the banks, are consequently checked at this point, and the rushing force it exerts to get through the stricture, reveals itself in the increased action upon the sides of the stream, as is made manifest by a comparison of the sections taken during the past year with those of the survey made in 1819 to 1822. Formerly, and indeed until the construction of the docks northward of the Prince's Basin, the Cheshire shore, below Seacombe, was left, as it were, almost entirely in a slack water, from the large expanse which the flood tide had to flow to, in Bootle Bay and over the Milehouse rocks; consequently, at that time, there was no wasting away of the land in question; but as the North Wall of the dock estate, and that across the mouth of Wallasey Pool, had been built, and as the flow of the tide, both on the ebb and flood, had been confined within straighter limits, the effect had been to create a current running more truly in the direction of the river's banks, of greater velocity and power, and producing more beneficial effects, not only upon the banks in the estuary, but also on those to seaward, by the formation of more direct channels, with as great, if not greater, depth of water, but at the same time causing an increased scour, upon some portions of the shores, from the causes above

explained. The remedy for this latter evil was at once obvious, namely, the protecting the face of the land, by a wall.

The wall thus recommended to be constructed was commenced in the month of September, 1858. It commences immediately to the north of the esplanade at Seacombe, and extends as far north as the steep clay beds, forming the banks of the river, extend beyond north Egremont. This wall, when finished, will be 1,300 yards in length, and it will be built to an average height of 20 feet, and of an average thickness of 7 feet.

THE WALLASEY EMBANKMENT.

Before proceeding to describe the constitution of the Mersey Docks and Harbour Board, and the great works which have been constructed, or are in course of construction, on both sides of the river Mersey, it may be well to mention a work which has been formed, in the outer part of the port, for the purpose of protecting the port and harbour from a threatened irruption of the sea. This work is intimately connected with the conservancy of the port, although erected under the powers of a separate act of parliament.

That part of the shores of the port of Liverpool which lies outside the estuary of the Mersey, and which extends from the Rock Lighthouse to the Red Stones in Hoylake, at the entrance of the river Dee, consists chiefly of a flat sandy beach, forming a continuation of the plain, which extends from the foot of the Cheshire hills to the sea.

This shore is lined, along the greater part of its course, with sand hills or downs, which have been raised by the action of the prevailing winds, on the sand of the sea shores and of the neighbouring banks. These sand hills are held together very slightly, by the roots of the star grass which grows among them, and they are alike liable to be swept into the interior, by the action of the winds, and to be undermined, by the waves of the sea, which dash against their base, at unusually high tides or in stormy weather. There are strong evidences, along this coast, that the sea has made great inroads on the land. Between Hoylake and Leasowes the remains of an ancient forest are found, on the sea shore, extending to a considerable distance below high water mark. The roots of the trees are still firmly fixed in the ground, in the position in which they grew, although they are now covered twice a day by the tides. On the same shore, but nearer to Leasowes, there are large beds of turf, which must have grown in fresh water marshes, but which are also covered at high water by the sea. At Leasowes, the continued action of the sea, has not only undermined and swept away the sandy downs which formerly existed on the shore, but has hollowed out a deep bay. Following the line of the lowest level, from this point of the coast, across the grassy plain now known as the Leasowes of Wallasey, to the outlet of the waters of this district, into the river Mersey, through Wallasey Pool, evidences have also been found, in digging into the ground, of a former irruption of the sea, by which lofty trees, covered with leaves and fruit, were suddenly overwhelmed and buried in the earth, under the force of a sudden inundation.

About thirty years ago the encroachments of the sea, on this coast, were so rapid as to excite fears that its waves would again break in, during some unusually heavy storm, at the lowest part of the coast, flooding the low lands adjoining, carrying great masses of sand down Wallasey Pool into the Mersey, and injuring the Rock Channel, which was at that time the principal entrance into the port. To prevent this evil, the corporation of Liverpool agreed to join with the neighbouring landowners, in erecting an embankment, on the shore, of sufficient strength to resist the encroachments of the sea. An act of parliament for that purpose was accordingly applied for, and obtained.

The Wallasey Embankment Act, passed in the session of 1829, recites, that there was reason to apprehend that serious injury would arise to the port of Liverpool, in the event of any further progress of the sea, on the sea shore, to the north-west side of the Leasowes, in the townships of Wallasey and Great Meols, in the county of Chester, by the diversion of the tidal waters, from one of the channels of navigation in the said port, and the consequent accumulation of silt, and the formation of sand banks, in various parts of the river Mersey. To prevent this, the Act provided, that a body of commissioners, seven in number, should be formed, furnished with powers to construct an embankment, on the part of the coast which was threatened by the violence of the sea, of sufficient strength and height to prevent further encroachments. The act further provided that if the sand hills to the south-east or north-west of the proposed embankment should fall down, or be blown away, the embankment should be extended, in both directions, so as to render it

effectual, for the protection of the adjoining lands, and the prevention of injury to the port of Liverpool, from the encroachments of the sea. The expense of erecting and maintaining embankments, fences, and other works, and any extension of them, and also the subsequent repairs and amendments of the same, were to be borne by the corporation of Liverpool and the adjoining landowners, in equal moieties.

In accordance with the provisions of this act, a huge embankment of earth, faced with hewn stone, was erected along the shore, at the point threatened by the violence of the waves, which has prevented any further encroachment of the sea. It has, however, been found necessary, from time to time, to raise, strengthen, and greatly extend the original structure. The embankment, as it now stands, is 3,000 yards in length, 102 feet in average thickness, and presents to the sea a sloping front, formed of stone-work of wall stones, containing many thousands of square yards of masonry. The ends of the embankment, on the sea shore, and the adjoining sandhills, are protected by lines of fascines, so arranged as to break the force of the waves. This embankment will become doubly valuable, when the great and costly works, now forming in the ancient pool of Wallasey, are completed and brought into use.

By the Mersey Docks and Harbour Act of 1857, the cost of maintaining the Wallasey Embankment, and all powers vested in and all obligations relating to it, are, after the 1st day of January, 1858, transferred to the Mersey Docks and Harbour Board (section 33).

The sum expended in constructing and maintaining the

Wallasey embankment, up to the year 1857, was upwards of £60,000, of which £30,000 was contributed by the corporation of Liverpool. In addition to this amount, the Mersey Docks and Harbour Board, last year paid the sum of £1708 7s. 10d., as their moiety of an assessment, for repairs of the embankment.*

THE MERSEY DOCKS AND HARBOUR ACTS OF 1857 AND 1858.

Having described the natural features of the Port of Liverpool, and the arrangements made for its protection and preservation, we next proceed to give a brief account of the governing body of the port, harbour, and docks, as established by the "Mersey Docks and Harbour Acts" of 1857 and 1858.† The first of these acts is entitled, "An Act for Consolidating the Docks at Liverpool and Birkenhead into One Estate, and for vesting the Control and Management of them in One Public Trust; and for other purposes." [25th August, 1857.] The second is entitled, "An Act to Consolidate and Amend the provisions of the several Acts, relating to the Liverpool and Birkenhead Docks and the Port and Harbour of Liverpool, and for other purposes connected therewith." [12th July, 1858.] The first of these Acts establishes a new constitution of the governing body; the second brings together,

* Accounts of the Mersey Docks and Harbour Board to 24th June, 1858, page 18.

† Acts of the Twentieth and Twenty-first of Victoria, cap. 162, and of the Twenty-first and Twenty-second of Victoria, cap. 92.

within the compass of a single act of parliament, containing, however, three hundred and sixty-eight sections, all that is of material importance and permanent value in relation to the docks of Liverpool, in the Acts passed from the date of the first dock act in the eighth of Queen Anne (1709) to the twenty-second year of Queen Victoria (1858).

CONSTITUTION OF THE MERSEY DOCKS AND HARBOUR BOARD.

The Constitution of the Mersey Docks and Harbour Board, as established by the act of 1857, altered and amended by the act of 1858, is as follows:

By the Mersey Docks and Harbour Act of 1857 (section 5), a board is created, called "The Mersey Docks and Harbour Board," which, it is stated, is to be a body corporate, with a perpetual succession, and a common seal; and by the Act of 1858 (sec. 31), it is stated, that the board thus formed, was intended, "to have, exercise, and enjoy, from and after the first day of January, 1858, all the powers, authorities, rights, privileges, immunities, indemnities, benefits, and advantages, theretofore vested in, or exercised, or enjoyed by, or which might have been exercised or enjoyed by, the Trustees of the Liverpool Docks, and to be in all respects, and to all intents and purposes, a continuation of the corporation of the Trustees of the Liverpool Docks."

It is provided by the act of 1857 (sec. 6), that this board shall consist of twenty-one members; but by the act of 1858 (sec. 24), the number of members is increased to twenty-eight. Of these members, twenty-four, named "the elective

members," are to be chosen by the dock rate-payers, and four, to be named "the nominee members," are to be appointed by the Conservancy Commissioners of the river Mersey, that is, by the First Lord of the Admiralty, the Chancellor of the Duchy of Lancaster, and the Chief Commissioner of Woods and Forests, for the time being.

The term of office of the members of the board, as fixed by the act of 1857, was three years; but this was extended, by the act of 1858, to four years. The following section of the latter act (section 28) will explain the arrangement made, with regard to the term of service of the twenty-four members of the permanent board, elected on the third day of January, 1859. The section is as follows: "The elective members of the provisional board shall retire from office on the first day of January, 1859, or if the election of the twenty-four elective members hereby required to be elected on that day shall not be then concluded, then, on the earliest day thereafter, on which such election shall be concluded, and on the same first day of January, the dock electors shall, in the manner provided by the Mersey Dock and Harbour Act, 1857, as varied by this act, proceed to elect twenty-four duly qualified persons, to be the elective members of the board; and such members, as soon as conveniently may be, after their first assembling together, shall, either by agreement or by lot, divide themselves into four classes; the members comprised in the first class shall retire from office, on the first day of January, 1860; those in the second class shall retire from office, on the first day of January, 1861; those in the third class shall retire from office, on the first day of January, 1862; and those in the

fourth class shall retire from office, on the first day of January, 1863; and on the first day of January in every succeeding year, the six elected members who shall then have been longest in office, shall retire therefrom, and on every such periodical retirement, as aforesaid, six duly qualified persons, shall, in the manner aforesaid, be elected to supply the vacancies; and every new member may remain in office for four years, and no longer."

The qualification of the elective members of the board, as fixed by the act of 1857 (section 11), is thus stated: "No person shall be qualified to be an elective member of the board, unless he reside within the borough or the customs port of Liverpool, or within ten miles of the outward boundary of the said borough or port, and has paid within the year immediately preceding his election, rates to an amount of not less than £50;" but this qualification was altered by the act of 1858, which provides (section 26) that "after the thirty-first day of December, 1858, the payment of rates to an amount of not less than £25, shall be a sufficient pecuniary qualification for an elective member of the board, in lieu of an amount of not less than £50, as required by the 'Mersey Docks and Harbour Act' of 1857."

The qualification of the electors of the board, is the payment of £10 of rates, and is thus provided for, by the act of 1857:—"On the first day of August, 1858, and on the first day of August in every succeeding year, the board shall cause a list to be made, to be called the List of Dock Electors; and every British subject who has, during the year immediately preceding, paid to the board, in respect of rates legally demandable from him, an amount of not less than £10, shall be entitled to

have his name placed on the list, and be qualified to vote at the next ensuing election for members of the board" (section 18, 2).

The annual list of dock voters, qualified to vote under these acts, was prepared and revised in August, 1858. The number of qualified voters on the register, was 1451. On the 1st and 3rd of January, in the present year, the electors registered in 1858 exercised their franchise, in the election of the first permanent "Mersey Docks and Harbour Board," when the gentlemen, whose names are given at the commencement of this report, as the present members of the board, were elected to that honourable and laborious office.

THE FUNCTIONS OF THE MERSEY DOCKS AND HARBOUR BOARD.

The functions of the Mersey Docks and Harbour Board naturally divide themselves into two parts. The first relate to the security of vessels using the port and harbour; the second to the accommodation and despatch of those vessels. The former include everything that relates to the management of the harbour itself; the second, everything that relates to the construction, the extension, and the management of the docks. These duties are equally important. The first affect the safety of upwards of twenty thousand vessels, which now sail into and out of Liverpool every year, with half a million passengers, emigrants, and seamen, as well as cargoes of the yearly value of upwards of £100,000,000, carried in them; the second affect the

ease, cheapness, and expedition, with which upwards of four millions and a half of tonnage is loaded and unloaded, repaired and accommodated, in the docks and harbour of the same port. The attention of the members of the Mersey Docks and Harbour Board are chiefly turned to the following objects, in connection with the safety of the port:

First, to the obtaining of correct surveys, and the publishing of correct charts of the port, for the information and guidance of the navigators of all nations, who resort to it, in so great numbers.

Second, to the buoying of the banks and channels, leading into the port.

Third, to the erecting of lighthouses, and to the constructing of lightships, for the guidance of vessels entering the port by night.

Fourth, to the organizing of the pilot service of the port.

Fifth, to the forming of a line of telegraphs, along the headlands of the coast, from Liverpool to the point at which vessels approaching the port are first seen, and those leaving it are last recognized.

Sixth, to the building and arranging for the prompt service of the crews of life-boats, on all those points of the coast, on which wrecks and casualities, involving danger to life, most frequently occur.

Seventh, to the furnishing the means of testing chronometers of captains of vessels frequenting the port, and supplying them with correct time at sea.

Eighth, to the furnishing them with means of testing the correctness of their compasses, which, with chronometers, are the great means of giving safety to modern navigation.

THE CHARTS OF THE PORT AND RIVER.

The entrance of the port of Liverpool, as already stated, is naturally dangerous. Vessels approaching it have to pass through the midst of a long range of sand banks by means of narrow channels. In order that this may be done with safety, it has been necessary to obtain the services of able hydrographers, in ascertaining and describing the positions of all the banks and channels; and it is not less necessary to retain permanently the services of an experienced officer, as marine surveyor, to watch, to mark by buoys, and to indicate in charts, the changes which are continually taking place, as soon as they occur. These are most extensive and frequent. Within twenty years of the present time, as already stated, the principal approaches to the port, through the mass of sand banks which fill the bay of Liverpool, were by means of two narrow channels, one of which winds along the Cheshire, and the other along the Lancashire, shore. The one which follows the Lancashire coast, near Formby Point, has been nearly filled up, by the accumulation of the sands, and, though it has recently improved, it is exceedingly narrow and crooked. The other, which follows the line of the Cheshire shore, from the neighbourhood of Hoylake to the Rock, at the entrance of the river, is also winding, and, in some places, very narrow and inconvenient. It is scarcely possible that a commerce so vast in extent, and carried on in vessels of so great a magnitude, as those which frequent the port of Liverpool, could have been conducted successfully, if no better passages had existed than these. Happily, a passage was discovered, at the commencement

of the reign of her present Majesty, through the very middle of the sand banks which lie at the entrance of the Mersey, to which the name of the Victoria Channel was given. The shallowest part of this channel, forming the Bar of the port, was dredged, the channel itself was carefully buoyed and lighted, and from the year 1836 to the year 1857, this channel continued to be the main entrance into the port. It was used both night and day, and that by the largest class of vessels. But the movements of the sand banks, which originally formed this channel, have, during the last few years, greatly diminished its usefulness; for, though there is still a good depth of water, and although the Victoria Channel can still be used with advantage, so long as there is light enough to show the buoys which mark its course, the channel itself has become so crooked, as to render it useless and even dangerous, when the buoys are no longer visible. Fortunately, while one set of changes has thus injured the form of the Victoria Channel, another has opened a second and more direct channel, named the Queen's, which is alike available by night and by day.

In making the changes rendered necessary by the alteration in the Victoria Channel, and the opening of the Queen's, it was requisite to change the position of the Formby Lightship, and of thirteen of the buoys which mark the channels; it was also necessary to abandon the use of the Formby Lighthouse, to ascertain and record the alteration of the bearings and distances of thirty or forty different objects, used in navigating the entrance to the river, to remove several of the buoys previously used, and to lay down several new ones. The extent and nature of these changes, and

the very recent period at which they have been made, show how much the safety of navigation depends on constant vigilance, in watching the changes which are taking place in the banks and channels, and in at once pointing them out, by means of buoys, at the points at which they occur, and on the charts, by immediate alterations. All these changes are clearly seen in the "Chart of the Approaches to Liverpool, from a survey made by order of the Trustees of the Liverpool Docks, by Lieut. Murray T. Parks, R.N., Marine Surveyor, 1858." How long this chart will indicate the actual position of the banks, shoals, and channels, no one can venture to say, for changes as great as those which have occurred during the last ten years, may occur at any time. The arrangements are, however, complete for securing the immediate recording of all such changes. Nothing but unceasing vigilance, in watching and recording them, can render the charts of the port of any use to navigators; and it must be remembered that charts which do not show the actual position of existing dangers are the most effectual means of leading vessels to destruction.

It is only by means of buoys and land marks, carefully arranged, numbered, and marked, that vessels can pass, even in the day time, through so narrow and intricate a navigation as that which leads into the port of Liverpool; and it would be impossible for them to enter the port at night, without the assistance of numerous lighthouses on shore, and of several lightships, anchored in the principal passages which lead into the port. In the preamble of the first dock act, which was passed in the eighth of Queen Anne (1709), it is stated, "That the entries into the harbour or port (of Liverpool) have been found so dan-

gerous and difficult, that great numbers of strangers and others have frequently lost their lives, as well as ships and goods, for want of proper land marks, buoys, and other directions, into the harbour;" and in the preamble of the Act of the second of George the Third (1762), it is declared that "By reason of the many sand banks, that lie off the adjacent sea coast and the entrance of the harbour to Liverpool, and by the frequent moving and shifting of the banks, and thereby choking up, shortening, or confining the old channels or currents, and making and forming new channels and currents in the sea, and there being at present no lighthouses or other lights erected and set out, ships and vessels sailing to and from the said port and harbour of Liverpool, are frequently engaged and entangled, in dark and tempestuous nights, within the said banks and shoals; and the navigation into and from the said port and harbour is very difficult, precarious, and uncertain, whereby the lives and properties of several of his Majesty's subjects have from time to time been lost, and are frequently endangered; and whereas, by the erecting of proper lighthouses in convenient places, within and near the said port, the navigation into the said port or harbour of Liverpool would be rendered more safe and certain, not only to all trading ships and vessels, but also for his Majesty's ships of war." The expectation held out in the latter part of the above passage may be considered to have been fully realised, when it is stated that although more than fifty thousand vessels passed through these channels yearly in 1855, 1856, and 1857, entering or leaving the port, the means of safety are now so complete, that only five of them were lost in the first of these years, six in the second, and only one in the third.

The following is a sketch of the plan adopted with regard to the buoys laid down at the entrance of the port:

THE BUOYING OF THE ENTRANCES TO THE PORT.

Each channel leading into the port has its own system of buoys, and every buoy is marked with the initial of the channel, and its own number in the channel. Thus a vessel approaching the Queen's Channel, first falls in with the Queen's Fairway Buoy or Bell Beacon, and finds it inscribed with the letters Q. Fy. This Fairway Buoy is of conical form, and 28 feet in height, and that it may not be missed by vessels approaching the Queen's Channel by night, or in foggy weather, it is provided with a powerful bell, which is kept sounding at all times, by the action of the winds and tides on the buoy. Passing forward directly towards the Formby Light-vessel, (painted red and with a red ball,) through the Queen's Channel, the dangers of the Little Burbo Bank are shown to the right, or starboard, by a line of chequered red and white buoys, of the shape known to seamen as "can" buoys; and the dangers from the banks called the Zebra Flats, to the left, or port, by chequered black and white buoys, of the shape known as "nun" buoys. Opposite the Queen's Fairway Buoy there is 36 feet of water at the lowest tides; but in passing between the Little Burbo Bank and the Zebra Flats, the depth of water, when it is lowest, is not more than 12 feet. This is the Bar of the harbour. After passing it the water deepens to 16, 20, and to 24 feet at the Formby Light-vessel. Passing on from the Formby Light-vessel to the Crosby Light-

vessel, through the Crosby Channel, the dangers to the right are shown by a line of red "can" buoys, and those to the left by a line of black "nun" buoys, which continue on both sides, to the entrance of the river. These buoys are marked C. 1, C. 2, and so on, all through the Crosby Channel.

The number of channels through, or amongst the sand banks which are distinguished by separate letters and numbers, is eleven, namely,—F. the Formby Channel, C. the Crosby Channel, Z. the Zebra Channel, H. the Horse Channel, Q. the Queen's Channel, R. the Rock Channel, H. E. the Helbre-Swash, B. P. the Beggar's Patch, L. the Lake or Hoylake, V. the Victoria Channel, and S. V. the Supplementary Victoria Channel. The uniform arrangement, with regard to the colour of the buoys, is that the red buoys are on the starboard hand or right, and the black on the port hand or left, when running into the port. The edges of the banks or flats, intervening between the channels, are marked by black and white chequered buoys. Superior "can" buoys, of a larger size, and supplied with perches at the top, point out the turning points or elbows of the principal channels.* The number of buoys laid down at various points in the channels and on the edges of the banks, amounts to 63, and whenever sudden danger arises from a wreck in the channel, a buoy is let down, at the place of danger. The wreck buoys are green in colour, and have the letters W. B. "wreck buoy" painted on them, in white letters.

* A Chart of the Approaches to Liverpool, from a Survey made by direction of the Trustees of the Docks, by Lieut. Murray T. Parks, R.N., Marine Surveyor, 1858.

Even greater care has been taken to enable the multitude of vessels, which arrive off the port in the night time, to reach it in safety, by means of a succession of lighthouses and lightships. These commence at Point Lynas, at the north-east point of the Isle of Anglesea, about fifty miles from the port, and are continued to the Rock Lighthouse, at the entrance of the river.

The distance of the lighthouse at Point Lynas from the Bell Beacon, leading into the Queen's Channel, and from the North-west Lightship, which is the outermost of the floating lights, is about thirty-nine miles. The height of the lighthouse at Point Lynas is 128 feet, and it shows a light, flashing at intervals of ten seconds.

The next lighthouses, in point of position, approaching the Mersey, are the upper and lower lights at Hoylake. The lower Hoylake light serves to warn vessels entering and leaving the port at night of the position of the north-west spit of great East Hoyle Bank, one of the most dangerous banks at the entrance to the channels. The Upper Lake, or Hoylake, Lighthouse serves to point out the entrance to the Horse Channel. This channel leads to the Rock Channel, and together they form the principal of the ancient entrances into the port. They are still much used, no less than fifteen thousand vessels passing through them yearly.

Proceeding up this channel, the Leasowes Light, built close to the shore, is seen, shining from sunset to sunrise, (as all the lights do) with a steady yellow light, from reflec-

tors, at an elevation of 110 feet. By means of changes in the relative positions of the Leasowe and Bidston Lights, vessels make their way from the North-west Lightship to the Fairway Buoy of the Horse Channel. This is a large buoy, or vessel, supplied with a powerful bell, which rings continually, from the motion of the waves and currents of the sea.

Further inland, and on the summit of the lofty hill at Bidston, is the Bidston Lighthouse. The reflectors of this lighthouse are at an altitude of 240 feet, and exhibit a steady yellow light, which is seen many miles at sea. This lighthouse enables vessels to clear objects so distant as the banks named the Jordan Flats, which are beyond the Great and the Little Burbo, and the Victoria and the Queen's Channels. It is also one of the principal lights by which ships make their way at night clear of the banks, and through the Horse Channel, into the Rock Channel.

The Rock Lighthouse, at the entrance of the river Mersey, exhibits an intermitting red and yellow light, the red light showing every third minute. The altitude of the reflectors of the Rock Lighthouse is 77 feet. A steady yellow light is also thrown into the Rock Channel and south-eastward, from a lower chamber of this lighthouse, so long as 11 feet of water remains in the gut of the Rock Channel,—a narrow passage which becomes nearly dry at low water. A black ball hung out from the Rock Lighthouse by day, also denotes that there is the same depth of water, namely 11 feet, in the Rock Gut. During fogs, a bell is tolled in this lighthouse, to warn vessels of the nearness of the rock, on which many vessels were lost in former times, and on which nearly a hundred people

perished, in a single wreck, within living memory. The Rock Lighthouse was built by the corporation of Liverpool, at a cost of £30,000, and has been used by the dock estate, at a rent of £1 a year, ever since it was erected.

Approaching the port of Liverpool, along the shores of Lancashire, the first lighthouse is that of Formby; but it has ceased to be used, within the last two years, owing to the alteration in the course of vessels, caused by the changes in the Victoria aud the Queen's Channels. Other changes may again bring it into use.

The Crosby Lighthouse, also on the Lancashire shore, has become more important than ever, in consequence of those changes. It exhibits a steady red light, from reflectors, at an altitude of 96 feet.

From the nature and extent of the banks, the lighthouses erected on the shores of the bay of Liverpool are not sufficient, to insure the safety of vessels entering and leaving the port by night. To supply this deficiency, three floating lightships have been built, and are kept moored at all times, at the entrance or in the windings of the channels, which lead into the port.

The first of these vessels is the North-west Lightship. It lies directly in the path of vessels entering or leaving the port, by the Rock and Horse Channels. The North-west Lightship is a three-masted vessel, with a black hull, marked with a broad white streak. By day it shows a black ball, and by night three lights, arranged in the order of fore, main, and mizen tops. It burns a blue light every two hours of darkness, after six p.m., and sounds a gong and bell, alternately, during fogs, to warn vessels of their position, and of the neighbourhood of the banks.

The second floating light is the Formby Light-vessel, which is moored at the bend, between the Queen's Channel and the Crosby Channel. The Formby Light-vessel has only two masts, it is painted red, and it shows a red ball by day, and two yellow lights by night. Vessels making a course from Point Lynas to the Bell Beacon, at the entrance of the Queen's Channel, can pass through that channel in safety, when they have the Formby Floating Light on the Crosby Shore Light.

Further in the channel, and at the point where the Queen's and the Crosby Channels join, is the Crosby Light-ship. This vessel is painted red, and shows a red ball by day; by night it shows a single yellow light. From the Crosby Light to the Rock Lighthouse there is a clear wide passage into the port, the lights at the Rock being visible nearly all the distance. Once within the Rock, both sides of the river present a blaze of light, from the lights of the town and neighbourhood, which extend from Crosby to Garston on one side, and from the Rock Lighthouse to New Ferry on the other.

THE LANDMARKS ON THE LANCASHIRE AND CHESHIRE SHORES.

In addition to lights, lighthouses, and buoys, there are great numbers of land marks on the shores of Lancashire and Cheshire, some of them erected for that purpose, others erected for different purposes, but which have been found useful as guides to vessels, entering or leaving the port, and are shown on the charts of the marine surveyor. The

views on those charts show the positions and bearing of the following objects:

View A of the chart, which is entitled "Appearance of the Land, with Crosby Lighthouse on Formby Lightship, S.E. by E. half E., leading in the Fairway, over the Bar of Queen's Channel," shows the position of the following objects on the Lancashire coast:—North-west Beach Mark, the North-west Mark, Formby Church, Formby Mill, Formby New Church, Formby Lifeboat House and Flagstaff, Ormskirk Mill, (some miles off,) Formby Old Lighthouse, Crosby Lighthouse, Formby Lightship, Crosby Beach Mark, Crosby Catholic Chapel, Crosby Mill, Crosby New Church, Crosby Light-vessel, the Asphalte Chimney, and Walton Gaol.

View B of the chart is entitled "Appearance of the Land, with Bidston Lighthouse bearing S. half E., leading into the Fairway, over the Zebra Flats, clear of Jordan Flats," and shows the appearance and relative position and bearings of the following objects, some of which are on the Lancashire, and others on the Cheshire coast: Everton Church, Liverpool highest chimney, New Brighton Church, Wallasey Old Church, Formby Lightship, Bidston Lighthouse, S. half E., (which clears Jordan Flats and leads into the Fairway,) Leasowe Lighthouse, and Hoylake Hotel.

View C is entitled "Appearance of Liverpool, rounding the N.E. elbow of the Great Burbo in the Fairway, with St. Nicholas's Church on Rock Lighthouse, S. by E. quarter E., leading up on the Burbo side of the Crosby Channel," and shows the appearance and bearings of the following objects on the Lancashire and Cheshire coasts:—Crosby Catholic Chapel, Everton Church, Liverpool highest chimney,

Rock Lighthouse and St. Nicholas's Church in one, New Brighton Church, and Wallasey Old Church.

View D is entitled "Appearance of Bidston and adjoining Land, when Bidston Lighthouse is its apparent breadth open to the Eastward of the Leasowe Lighthouse, (bearing S.E. quarter S.,) lead from N.W. Lightship up the Horse Channel until Hoylake Light bears South," and shows the appearance and position of the following objects :—Wallasey Church S. 56° E., Leasowe Castle, Bidston Lighthouse, alt. 30, (The Mark) Leasowe Lighthouse S. 41° 12 E. three miles, Woodchurch, Thingwall Mill, Grange Beacon S. 9° S.W., Hoylake Upper Lighthouse.

View E is entitled "Appearance of Grange and Hilbre Island with Hoylake Lighthouses in one, (bearing S.W. by S.,) indicating when you must haul up the Rock Channel," and shows a point S. 9° 15 W. Grange Beacon, S. 22° 57 W. Hoylake Church, Hoylake Lighthouses, S. 34° 40 W. one mile and three-quarters, (The Mark) Moel Fammou alt. 1°, Hotel, Hilbre Telegraph, S. 64° 40 W.

View G is entitled "Appearance of Land when entering Rock Gut with Walton (or Inner Bootle) Mark widening between the two Shore Marks," and shows the appearance and position of Walton Gaol, Bootle Stack, Upper Bootle Mark, between the two shore marks, Walton Church, and New Brighton Church.

View H is entitled "Appearance of Bidston and contiguous feature with Bidston Lighthouse, locking on the East side of Leasowe Castle, (bearing S.S.E. quarter E.,) ensures being from a quarter to one mile Westward of Burbo Flats," and shows the following objects :—Wallasey Church, S. 41° 35 E. Bidston Lighthouse, alt. 30, Leasowe

Castle, S. 22° 30 E. Leasowe Lighthouse, Grange Beacon S. 26° 44 W.

View I is entitled "Appearance of Grange Land and Hilbre Island when running from the outer Lightship up Hilbre Swash, with the two Beacons in one (bearing S. half E.,)" and shows the following objects:—Upper Hoylake Light, S. 31° E. Hotel, Grange Beacon S. 21° 28 E. Kirby Church, Beacons in one, S. 5° 30 E. two and a half miles, (The Mark) Hilbre Island Telegraph S. 2° W.

The general result of giving the appearance of these numerous objects is that navigators, in entering or leaving the port, have the opportunity of ascertaining their position almost every moment, and at every point of difficulty or danger.

THE PILOTS OF LIVERPOOL.

A matter of no less importance to the security of ships entering the port, is the creating and preserving of an efficient body of pilots, thoroughly acquainted with the approaches, and capable of guiding ships through them by night and by day, and in storm as well as calm. Such a body has now existed for upwards of eighty years, and has acquired the highest reputation for skill, in the performance of its arduous and dangerous duties.

The Mersey Docks and Harbour Act of 1858, (section 118) provides that the board created by that act shall have the whole and sole regulation and management of pilots, and of pilot boats, in the port of Liverpool.

The committee to be appointed by the board for that purpose, is to consist of not less than twelve persons, and

is to be called "The Pilotage Committee." Of this committee, so appointed, one-third of the members is to be composed of persons familiar with the duties and qualifications of pilots, not being members of the Mersey Docks and Harbour Board. This committee is to be appointed in the month of January, in every year. The pilotage committee is to be deemed a committee of the Mersey Docks and Harbour Board.

With regard to the mode of appointing pilots, and their qualifications, the act provides (section 120) that all persons holding licenses as pilots, at the commencement of this act, shall be deemed to be licensed by the Board; and that, for the future, the Board shall examine and grant licenses as pilots, to any persons, being of the age of eighteen years or upwards, who have served as apprentices, in any of the Liverpool pilot boats, for not less than three years, and who shall offer themselves, with the consent of their masters, to be admitted as pilots. The Board may also, if they shall deem it expedient to do so, but not otherwise, examine any other person, not having so served, who shall be desirous to act as a pilot. Every such apprentice, or other person, who upon any such examination shall be found by the Board to be qualified to act as a pilot, is to receive a license in writing, signed by the secretary of the Board, certifying that he is duly qualified to act as a pilot for the port of Liverpool; which license is also to set forth the name, age, stature, complexion, and place of abode, of the person so licensed.

Persons acting as pilots without a license are, by this Act, to forfeit twenty pounds for every such offence (section 123); and pilots refusing to take charge of any inward-

bound vessel, upon a proper signal being made for a pilot, or of any outward-bound vessel, upon the request of the master, or in any manner failing in or neglecting their duty as pilots, are liable to have their licenses recalled, declared void, or suspended by the Board; and if they act as pilots after this they are liable to the same penalties as if they were not pilots (section 124).

The distances to which vessels are to be piloted if required to be, are as follows (section 127):—Every pilot taking upon himself the charge of any vessel, if so required by the master, is to pilot such vessel, if sailing out of the port through the Queen's Channel, so far to the westward as the buoy commonly called or known by the name of the Formby Northwest Buoy, or Fairway Buoy, of the Queen's Channel; and if sailing through the Rock Channel, to pilot the vessel so far to the westward, as the Northwest Buoy of Hoyle.

In order that pilots may have the strongest inducement to be on the look-out for vessels, before they reach the dangerous part of the approaches to the port, it is provided, by this Act (section 135), that if any vessel inward bound shall not have met with a pilot before the House and Telegraph Station, on Great Hilbre Island, shall bear south-south-west, by the compass, or shall be piloted from the road of Hoylake only, there shall be paid for such vessel one half only of the rates authorised to be taken for piloting such vessel from any point short of the distance of the Great Ormshead; and that if no pilot shall board, or offer his services, before such vessel shall have passed the Brazil Buoy, in the Rock Channel, or the Crosby Lightship, in Formby Channel, then the pilotage payable in respect of

such vessel, shall be fixed at the discretion of the Mersey Docks and Harbour Board, (section 135).

All pilot boats, as well as pilots, are required to be licensed by the board; such license to continue in force so long as the ownership of the boats shall continue the same as when the license was granted, provided the owners shall continue capable of holding such boat, under the provisions of this act, and provided also, that such boat shall be kept in good repair, and properly fitted out (section 150). Any pilot using an unlicensed boat is liable (section 155) to a penalty of three guineas for every day, or portion of a day, on which he shall use it, and is also liable to have his license suspended, or forfeited, by the Board.

It appears from a parliamentary return, on the subject of "Pilotage," laid before the House of Commons, and ordered to be printed on the 12th April, 1858 (No. 174), that the total number of persons engaged in the arduous and dangerous occupation of pilotage in the port of Liverpool was 306, at the date of that return. Of this number 36 were master pilots, 163 were journeymen pilots, 54 were licensed apprentices, and 53 unlicensed apprentices. The pilot boats were twelve in number, and were thus officered and manned:

Pilot boat No. 1 had three master pilots—William Hughes, Robert Taggart, and Edward F. Callister, and thirteen journeymen pilots, all of whom, both masters and journeymen, were licensed to pilot vessels of any size. She had also two apprentices, licensed to pilot vessels not exceeding 500 tons; four apprentices, licensed to pilot vessels not exceeding 200 tons; and three apprentices, not yet licensed.

Pilot boat No. 2 had three master pilots—Joseph Powell, John Corrin, and Samuel Jones, and fourteen journeymen, all licensed to pilot vessels of any size; two apprentices, licensed to pilot vessels not exceeding 500 tons; four, to pilot vessels not exceeding 200 tons; and four unlicensed.

Pilot boat No. 3 had three master pilots—John Williams, Thomas Parry, and John Sawell, and fourteen journeymen, all licensed to pilot vessels of any size; four apprentices, licensed to pilot vessels of 200 tons, and four apprentices not yet licensed.

Pilot boat No. 4 had three masters—John Shepherd, Charles Christie, and John J. Ellison, and fourteen journeymen, all licensed to pilot vessels of any size; one apprentice, licensed to pilot vessels not exceeding 500 tons; three, licensed to pilot vessels not exceeding 200 tons; and five unlicensed.

Pilot boat No. 5 had three master pilots—Isaac Williams, Hugh Jones, and Peter Dickenson, and fourteen journeymen, of whom thirteen were licensed to pilot vessels of any size, and one to pilot vessels not exceeding 500 tons; also one apprentice, licensed to pilot vessels not exceeding 500 tons; one to pilot vessels not exceeding 200 tons; and four unlicensed.

Pilot boat No. 6 had three master pilots—Thos. Parry, Thomas Davies, and Thomas Hudson, and fourteen journeymen pilots, all licensed to pilot vessels of any size; two apprentices, authorised to pilot vessels not exceeding 500 tons; two to pilot vessels not exceeding 200 tons; and five unlicensed.

Pilot boat No. 7 had three master pilots—William Rowlands, Thomas Thompson, and John Williams, and six-

teen journeymen pilots, licensed to pilot vessels of any size; one journeyman, and one apprentice, licensed to pilot vessels not exceeding 500 tons; four apprentices, licensed to pilot vessels not exceeding 200 tons; and four unlicensed.

Pilot boat No. 8 had three master pilots—John Bark, John Blackley, and W. J. M'Cracken, and thirteen journeymen pilots, licensed to pilot vessels of any size; two apprentices, licensed to pilot vessels not exceeding 500 tons; two, licensed to pilot vessels not exceeding 200 tons; and five unlicensed.

Pilot boat No. 9 had three master pilots—Thomas Crane, William Lancaster, and John Pritchard, and thirteen journeymen pilots, all, except two, licensed to pilot vessels of any size, and they licensed respectively to pilot vessels not exceeding 500 tons and 200 tons; one apprentice, licensed to pilot vessels not exceeding 500 tons; three, to pilot vessels not exceeding 200 tons; and five unlicensed.

Pilot boat No. 10 had three master pilots—Jas. Wilson, Hugh Williams, and William Parry, and thirteen journeymen pilots; two apprentices, licensed to pilot vessels not exceeding 500 tons; four, to pilot vessels not exceeding 200 tons; and four unlicensed.

Pilot boat No. 11 had three master pilots—Richard Parry, Robert Williams, and William Harris, and thirteen journeymen pilots, authorised to pilot vessels of any size; one apprentice, licensed to pilot vessels not exceeding 300 tons; three to pilot vessels not exceeding 200 tons; and five unlicensed apprentices.

Pilot boat No. 12 had also three master pilots—Hugh Woodward, Samuel Bark, and John Tunstall; twelve journeymen pilots, all licensed to pilot vessels of any size;

one apprentice, licensed to pilot vessels not exceeding 500 tons; two, to pilot vessels not exceeding 200 tons; and five unlicensed.

It will be seen, from the above statement, that after the ordinary duties of an apprentice are learnt, men have to show their ability to manage comparatively small ships, drawing little water, before they are permitted to pilot vessels of larger draft, through channels in which a mistake of a few yards of position, and two or three feet of depth of water, might frequently involve the loss of ship, cargo, and every soul on board.

The total amount earned by the twelve pilot boats of Liverpool, in the year 1857, is stated in the same return to have been £60,964 10s. 3d., earned from 13,719 vessels. The pilots supply and repair their own boats, which must be built and furnished, to keep the sea at all times, in defiance of wind and storm.

The general result of the precautions taken in lighting, buoying, and surveying the port, and of the skill and boldness with which the pilots discharge their duties, is best seen, from the security with which the multitudes of vessels engaged in the commerce of the port, pass in and out in all weathers, and by night as well as by day. The acting conservator, Rear-Admiral George Evans, in his report to the board, dated January, 1858, states, that 54,288 vessels passed in and out of the port of Liverpool during the year 1857, and that, "owing to the skill and meritorious conduct of the Liverpool pilots, this prodigious number of vessels (averaging 148 per diem) was safely conducted through the channels and quicksands of the port, with the loss of only one vessel, under their charge."

It appears, from a paper laid before both Houses of Parliament last session, by command of her Majesty, and entitled "An Abstract of the Returns, made to the Lords of the Committee of Privy Council for Trade, of Wrecks and Casualties, which occurred on and near the Coasts of the United Kingdom, from the 1st of January to the 31st December, 1857," and also for the two preceding years, (Table 16) that the number of vessels lost by striking on rocks and sands, on the coasts of Great Britain in the year 1855, was 105, of which two were lost on the Burbo Banks and three on the East and West Hoyle Banks, at the entrance of the Port of Liverpool; that in 1856, 115 vessels were lost, of which two were lost on the Burbo, and four on the Hoyle Banks; and that in 1857, 161 vessels were lost, of which only one was lost on the Burbo, and not even one on the Hoyle. We may add that in the year 1858, no vessel of any importance was lost on those formidable banks, or rather ranges of banks, which extend quite across the entrance of the Bay of Liverpool.

THE LIFEBOATS.

Admiral Evans, in his last report, states "that the crews of the Liverpool lifeboats, during the year 1857, with their usual intrepidity, assisted twenty-two vessels in distress, and saved the lives of forty persons."

The arrangements with regard to the lifeboat service of the Port of Liverpool are as follows.

Approaching the port from the south, the first lifeboat station is at the point of Ayr, on the Welsh side of the River Dee. It is directly opposite to the West Hoyle

Bank, an enormous bank of sand, which dries 22 feet at low water, and round which wind the dangerous passages that lead into the estuary of the Dee. This is one of the most dangerous points on the coast, and here the Mersey Docks and Harbour Board maintain two lifeboats, and retain the boldest seamen of the neighbourhood, to render assistance, to the crews and passengers of vessels, driven on the banks or drawn into the shallows. This duty is nobly performed, too often at the risk, and even with the loss, of the lives of the brave fellows who man the boats. Such was the case on the 4th January, 1857, when the whole crew of the Point of Ayr lifeboat perished, in attempting to save the crew of a stranded vessel. The following item, in the last Annual Account of the Mersey Docks and Harbour Board appears in the Conservancy Department. "Donation, for the Relief of the Widows and Children of the Crew of the Point of Ayr Lifeboat, who were unfortunately drowned on the 4th January, 1857, £500." And it is satisfactory to add, that this only formed part of a liberal subscription, raised by the benevolence of the merchants and other inhabitants of Liverpool, which altogether produced some thousand pounds, for the relief of the widows and children of the men who had lost their lives in the performance of so noble a duty.

The next lifeboat station is at Hilbre Island, with another boat at Hoylake, opposite to the East Hoyle Bank and the Horse Channel. As we have mentioned, upwards of 15,000 vessels passed through this channel in the year 1857, and nearly as many last year. The passage through which the vessels enter the Horse channel is only seven hundred yards wide, and the channel soon narrows to less than half

that width. The dangers, on both sides, are very great, but by continued vigilance the loss both of life and property is very small. According to the Parliamentary Return respecting Wrecks and Casualties, already quoted, the number of lives lost under such circumstances, on the coasts of the United Kingdom, amounted to 920 in 1852; to 689 in 1853; to 1,549 in 1855; and to 532 in 1857, making the total loss of life in those years 3,690, and the average yearly loss 922. The loss of life from this cause at the entrance to the Mersey, forms a very insignificant portion of this number

Four lifeboats are always ready for duty in the river Mersey, a precaution most necessary, in a seaport so crowded with shipping and full of passengers. Two of these are kept on the Liverpool side of the river, the other two at the Magazines, on the Cheshire side. All are within a moderate distance of the mouth of the Mersey, and are available, in case of accidents, occurring either within or outside the estuary.

Another lifeboat is maintained, by the Board, at Formby, on the Lancashire coast. This is the nearest point of the coast to the Queen and the Victoria Channels, and to the old Formby Channel, as well as the present Crosby Channel. The whole of this coast is lined with sandbanks, of which the Burbo Banks are the most extensive and formidable.

These five lifeboat stations are so selected as to ensure prompt relief along the whole shores of the port, both outside and within the estuary. They are upheld, and steam power is supplied, to tow the boats in time of need, at a cost, which last year amounted to £2,871; a sufficient

outlay for the purpose, but a very small one, when it is considered how much they conduce to the safety of the hundreds of thousands of passengers and seamen, who every year pass out and into the Port of Liverpool.

THE LIVERPOOL OBSERVATORY.

The Observatory was established in 1844, for the purpose of giving accurate time to the port. The longitude of a ship at sea is found by a knowledge of the error of the chronometer, in Greenwich time; it is, therefore of the highest importance to the mariner, when leaving the Mersey on a long voyage, to know what his chronometer is fast or slow, and how much it is losing or gaining daily. At the meeting of the British Association for the Advancement of Science, at Liverpool, in 1837, it was stated, in a memorial to the corporation, that the inaccuracies in the Greenwich mean time, given in some of the principal ports in the kingdom, were known to be sufficient to cause the wreck of ships. The Observatory was established in consequence of these and similar representations. At that time it was not known that the mariner could be assisted by such institutions, further than by supplying him with accurate time; but the experiments instituted at this Observatory have since shown that, in addition to giving the time, navigation can be greatly facilitated, and rendered more secure, by subjecting chronometers to a well arranged test, previous to their being taken to sea. The method of testing originated, and first practised at this Observatory, has been recently adopted for testing the chronometers

employed in the royal navy, and the Liverpool Observatory has become a sort of model establishment, for other seaports. In December, 1857, her Majesty, having decided on presenting to Prince Alfred a marine chronometer, and being desirous that it should be one of the highest character for performance, caused inquiry to be made, as to the best method of securing such an instrument, and the Prince Consort having been made acquainted with the means employed at the Liverpool Observatory, for testing the value of these instruments, caused one to be selected, from fifty-five new ones, by various makers, which were at that time deposited at the Observatory, for the purpose of being tested, previous to their being sold to merchant captains and shipowners. In addition to giving time to the port and testing chronometers, this Observatory has established for itself a world-wide reputation, in a scientific point of view. At the meeting of the British Association, in 1854, Professor Phillips, the general secretary, "congratulated the association on the triumph it had achieved. It was at the Liverpool meeting of the Association, in 1837, that the establishment of an Observatory was proposed, and now, on their return to Liverpool, they found the Observatory working, working well, and producing results, which, it was not too much to say, could not be produced from any other observatory in the world, and which results were at this moment of the highest possible importance, in correcting many of their views, in regard to the conditions of the atmosphere. Certainly at this moment there was no observatory more important than this. None from which could be obtained such practically useful and accurate results. He hoped that equally

valuable observatories would be established in other ports." This Observatory is now under the control of the members of the Mersey Docks and Harbour Board, who have recently caused to be lithographed diagrams and tables of the direction and strength of the wind, deduced from hourly averages of observation, taken at the Observatory during the six years ending December 31, 1857. The completion of the electric telegraph from Holyhead, and along the line of docks, which is now decided upon, will afford great facilities for extending the practical usefulness of this establishment. We have a remarkable instance of the practicability of disseminating accurate time, where telegraph wires are laid, in the Liverpool Town Hall clock, the movements of which have been under the control of a normal clock, at the Observatory, for nearly two years; and during that time the striking of the first blow of the hammer, at each hour of the day, has been much more certain, and quite as accurate, as the dropping a time signal ball could be rendered. At present this is the only turret clock in Liverpool, the movements of which are so controlled as to cause it to keep accurate time, to a fraction of a second, throughout the twenty-four hours, and we believe we shall be quite right in saying, that there is not a single large turret clock in London, whatever expense may have been gone to in its construction, the performance of which will bear the slightest comparison, in point of accuracy, with the performance of the old turret clock, on the top of the Liverpool Town Hall, since it has been under the control of the clock at the Observatory.

REGISTERING TIDE GAUGES.

The rise of the tides in the Port of Liverpool is not merely a matter of scientific interest, but also of the greatest practical importance. A careful record of the movements of the tides, during a very long course of years, was kept by Lieut. Hutchinson, who was formerly harbour master of Liverpool; and at the present time, there are registers kept of the tides, both in the river Mersey, and at Hilbre Island, at the entrance of the river Dee. With regard to these, the acting conservator of the port, Rear-Admiral Evans, observes:

"The self-registering tide gauges established at Hilbre Island and George's Pierhead, in 1855, are well attended to by Lieut. Murray T. Parks, R. N., the marine surveyor of the port, who has made some improvement in the details of the arrangements, which no doubt will, in a few years, afford valuable data for accurate general purposes."

The following information with regard to the tides of the Mersey, and of the bay of Liverpool, is taken from the charts of the Marine Surveyor, and from the report of Mr. James Walker, and Mr. John B. Hartley, on the river Mersey.

In the narrowest part of the river Mersey, between Prince's Dock and Seacombe, the equinoctial spring tides rise to the height of 33½ feet; ordinary spring tides rise to the height of 29 feet (above the same level); and neaps rise to the height of 23 feet, also above that level.

The height of the tides in the river Mersey is usually computed, for practical purposes, from a fixed point, known as the datum of the Old Dock Sill, that is,

the level of the sill leading from the river into the Old Dock. This datum, or standard of measurement, was fixed about the year 1720, when the Old Dock was opened; and at the time when the Old Dock was filled up, the level of the Old Dock Sill was marked, on a tide gauge, which is still preserved, on the west side of the centre pier of the Canning Half-tide Dock. This point or datum is 8 feet 9 inches, above the low water level of average spring tides.

The maximum velocity attained by the tides, unassisted by the wind, in the narrowest part of the river, between Prince's Dock and Seacombe, is, at neap tides, $4\frac{1}{2}$ miles an hour, and at spring tides $6\frac{3}{4}$ miles an hour. The average velocity of the highest tides at this point is $5\frac{1}{2}$ miles, and of ordinary springs $4\frac{1}{2}$ miles.

The speed of the flow of the tide increases rapidly, as it ascends from the open sea to the Seacombe narrows. At the North-West Lightship, 14 miles from St. George's Pierhead, and in the open sea, it flows, in spring tides, at the rate of three-quarters of a mile the first hour, one and a-half miles the second hour, two and three-quarters miles the third hour, two miles the fourth hour, one mile the fifth hour, and half a mile the sixth hour. Opposite the Rock Lighthouse, at the entrance of the river, the tide flows at the average rate of four miles an hour; and at the narrows at Seacombe (as already mentioned), it flows at the rate of five and a half miles an hour. Above that point the estuary widens, and the speed of the tide decreases.

In the survey of the river Mersey, in the year 1857, Mr. Wright, who took the depths of the river, fixed level tide guages, at New Brighton, Egremont, Seacombe, Tran-

mere, Rock Ferry, and Eastham Ferry, from which he found that at Rock Ferry, the water in spring tides, rose one foot higher than the same tides at Egremont, and that the difference of the time of high water was ten minutes. At Eastham there was an additional rise of three inches, making altogether fifteen inches between Egremont and Eastham.

Mr. John B. Hartley found also, that the tides rise 20 inches higher at Runcorn than at Liverpool. Of this quantity 14 inches was between Eastham Ferry and Runcorn; but as the levels, fixed along the shore by Mr. Wright, were not carried higher than Eastham Ferry, the correctness of the result depends, as respects Runcorn, on the heights given by the Ordnance surveyors. Supposing these to be correct, we must add 14 inches of rise between Eastham and Runcorn, to the 15 inches shown to exist between Egremont and Eastham. This would give 29 inches, or nearly $2\frac{1}{2}$ feet, as the additional rise of tide at Runcorn, above the level of the same tide at Egremont. The difference of time of high water, at Runcorn and Liverpool, was found to be from 40 to 50 minutes.

THE TELEGRAPH ALONG THE COAST FROM LIVERPOOL TO HOLYHEAD.

The Liverpool Dock Trustees established a semaphore telegraph in the year 1827, from Liverpool, along the rocky headlands of Wales, to Holyhead, in the Isle of Anglesey, for the purpose of securing the earliest information, as to the approach of vessels to the port, the latest, as

to vessels leaving it, and the most complete information as to their progress, along a coast of rocks, sands, and storms, without a single harbour of refuge. The power of electricity, which was entirely unknown, as a means of conveying information, at the time when this telegraph was erected, is about to be applied to it, it being often desirable to convey information, along the whole line, or to and from different points on the line, in thick weather, and occasionally at night, when the semaphore cannot be used.

The following are the present stations of the telegraph:

1st. In Liverpool, a lofty tower, in Tower-buildings, near to the river; 2nd, Bidston Hill, in Cheshire, at a height of about 240 feet above the level of the Mersey; 3rd, Hilbre Island, a rocky islet, at the entrance of the river Dee; 4th, Voel Nant, on the sea front of the Flintshire mountains; 5th, Llysfaen, another promontory, on the coast of Denbighshire; 6th, the Great Ormshead, one of the most magnificent and conspicuous rocks on the shores of North Wales; 7th, Puffin Island, at the entrance of the Menai Straits; 8th, Cefn Du, the first great promontory of Anglesey; 9th, Point Lynas, another promontory, on the same island, at which the Liverpool Dock Trust have long maintained, and the Mersey Dock and Harbour Board now maintain, a lighthouse, to warn vessels of the perils of this "iron bound" coast; and 10th, Holyhead. By means of this swift line of communication, the approach of vessels is known on the Exchange at Liverpool, many hours before they reach the port; the commanders of vessels, are informed of the force and direction of the winds, in the open sea, before they leave their anchorage in the river; and the crews of vessels, exposed to

the perils of the dangerous coast of Wales, are ensured relief, from life boats and steamers, at the earliest moment, that the signal of "a ship in danger," is conveyed along the line.

In addition to the means above described, for securing the safety of vessels, in entering and leaving the harbour of Liverpool, the Mersey Dock and Harbour Board assist in securing, to the captains of vessels which frequent the port, not only correct time, for the regulation of their chronometer, but an easy method of testing the correctness of the ships' compass.

RUNDELL'S COMPASS BEARINGS.

Every one who has visited the Mersey, or crossed its numerous ferries, since 1856, must have observed the large figures and marks so conspicuously painted on the dock walls, facing the river. Few persons, however, even among those resident in Liverpool, unless they are immediately interested in nautical affairs, have any clear idea of the use to which these marks are applied. Each of them represents a particular magnetic bearing of a very tall chimney, situated near the Vauxhall-road, and which forms a prominent object from all parts of the river; so that wherever a ship may lie, her master, by looking towards this chimney, and observing the mark on the dock wall which appears nearest its base, is at once aware of its correct magnetic bearing, and has thus a test, by which to judge of the correctness of the compass used for steering his vessel. Now that iron is so much used in the construction of ships,

and is so frequently carried as cargo, this is a matter of growing importance. The increased speed attained by modern ships also tends to direct attention, to what would formerly have been considered as only small errors in this instrument.

When the iron in a ship is suspected to influence her compass, the usual course has been to turn the ship's head towards the different points of the compass, and at each to observe how much the north end of the needle is deflected to the east or west of the magnetic north, noting the amount, in what is termed a *table of deviations;* the process being technically termed "swinging ship"—the correct magnetic directions being ascertained by azimuths of the sun, which involve the working of a trigonometrical problem, or by means of a compass placed on shore. But as the Liverpool docks are surrounded by so much iron, very little dependence can be placed on the last method, as the shore compass might itself be in error.

By the use of the marks, however, these difficulties and uncertainties are avoided; and as ships, when at anchor in the river, turn with the tide every six hours, their masters have constant opportunities of ascertaining the deviations of their compasses, on as many points as they may think necessary. The whole process is, in fact, made so simple, that it is now a matter of surprise that it was not introduced before.

These marks were suggested by, and painted under, the direction of Mr. W. W. Rundell, secretary to the Liverpool Compass Committee, a company of gentlemen deputed from the various scientific and mercantile associations of the neighbourhood, to investigate the subject of compass devia-

tion, more especially as it affects ships wholly built of iron. As connected with the history of the navigation of Liverpool, it may be mentioned, that two reports of this committee have already been made to the Board of Trade, and presented to Parliament, in the shape of a blue book, which have been highly commended by the astronomer royal.

THE DOCKS OF THE RIVER MERSEY.

The docks of Liverpool, in their existing form, are entirely the work of the present age. It is true that the corporation, the merchants, and the shipowners of Liverpool began to construct docks nearly a hundred and fifty years ago, and that they have been employed, in successive generations, in constructing docks ever since; but the docks, as they now stand, have been constructed or entirely remodelled during the last thirty years. When the present dock engineer, Mr. Hartley, was appointed to office, in the year 1824, the water space of the Liverpool docks only covered an area of $50\frac{3}{4}$ acres. Since that time, the arrangement of that water space has been greatly changed, and all the then existing docks have been reconstructed, with the single exception of the Prince's Dock, which was first opened to commerce, on the coronation of George IV., in the year 1821. Between the years 1824 and 1843 the water space of the docks was increased from $50\frac{3}{4}$ acres to $96\frac{1}{2}$ acres; and between the years 1843 and 1859, it was increased from $96\frac{1}{2}$ acres to $212\frac{1}{2}$ acres of docks, and 23 acres and 2034 yards of dock basins. The first Birkenhead Dock Act was passed in the year 1844, and the first of the

Birkenhead docks, named the Morpeth Dock, was opened by the present Earl of Carlisle, then Lord Morpeth, and Chief Commissioner of Woods and Forests, on the 23rd of March, 1847. Since that time the Egerton Dock, and a portion of the Great Float, have also been opened, but these are now in course of entire reconstruction. When completed they will add 158 acres of water space to the 236 acres already existing at Liverpool, and will raise the total quantity of water space, in the Docks of the Mersey, to nearly 400 acres. This is eight times the size to which it had extended, between the year 1709 (when the Liverpool docks were commenced) and the year 1824. A dock of four acres, large enough to receive 100 small vessels, and yielding a revenue of £600 a-year, was the germ, from which the present docks and dock estate of the River Mersey have sprung.

The object of the recent rapid increase of these docks, has been to meet the wants of a commerce and shipping, increasing with equal if not greater rapidity; and in remodelling the old docks, and constructing new ones, every effort has been made to adapt them to the present wants of trade and navigation.

THE SEA WALL OF THE DOCKS.

In a port situated in a wide estuary, and within two or three miles of the open sea, it has been necessary, in constructing docks, to provide both for the safety of shipping from storms, whilst in port, and for its accommodation, in discharging and receiving cargoes, and repairing injury.

The sea wall along the Liverpool side of the Mersey, by which the shipping, in the long line of docks, is protected from the violence of winds and storms, is one of the greatest works of the present, or of any age. It was necessary that this wall should be long enough to protect the whole line of docks; that the foundations should be sunk to such a depth, as to resist the undermining influence of the stream; that it should be strong enough to resist the violence of the greatest storms; and that it should be sufficiently lofty to beat off the highest waves; and all these objects have been attained. The present length of this sea wall is 9,700 yards, or upwards of five miles; its average thickness is 11 feet; its average height from the foundations is 40 feet. The older part of the sea wall is formed of red sandstone, but the modern is faced on the upper part with Scottish granite. The mortar is formed from the lime of the Halkin Mountain, in North Wales.

In erecting the sea wall, in front of the Liverpool docks, great difficulties had to be overcome, in obtaining a solid foundation. The foundation in front of the Prince's Dock, in the narrowest part of the river, and that in which the currents are strongest, had to be laid on great balks of timber, sunk to a depth which could be reached only twice in the year, and then only for a few days, namely, at the vernal and the autumnal equinoxes, when the tides ebb to the lowest point of the whole year. At one of those periods, in the month of March, 1817, the low water workings were entirely prevented by the tempestuousness of the weather, and nothing could be done, at that part of the foundation, until the end of September and the beginning of October. Fortunately, the weather was favourable

at that time, and six courses of balks were laid, extending 105 yards in length. It was thus that a foundation was slowly gained, which has since defied the violence of storms, and the constant action of the most rapid currents. Similar difficulties were met with in obtaining a solid foundation, at other points. At the river entrance of the George's Basin it was necessary to form a foundation, by driving piles, to a great depth, through a quicksand. The whole of the river wall, in front of the Albert Dock, and the piers of the double entrance from the river into the half-tide basin, are on a quicksand, and rest on 13,792 piles of beech-wood timber. The entrances to the Wellington Half-tide Dock are also built on long piles of beech timber, driven down into a very deep peat moss, in which the branches of trees, and the horns of the deer and the buffalo, have been found, far below the present line of low water.

The form and direction of the Birkenhead docks are very different from those of Liverpool. Instead of running, as the Liverpool docks do, along the side of the estuary, they run inland, along the bed of the ancient Pool of Wallasey. Hence their greatest length is inland, and thus a sea wall, of 800 yards in length, closes up the former mouth of the pool, and protects them from the violence of the sea.

THE FORMATION OF THE DOCKS.

The docks built under the shelter of these great ramparts extend, on the Liverpool side of the Mersey, five miles in length, running from north to south; and those on the Birkenhead side extend two miles and a half inland,

running from east to west. As already stated, they will together contain, when the Birkenhead works are completed, nearly 400 acres of water space. On the Liverpool side of the river, the docks between Prince's Dock Basin and the northern boundary of the Clarence Graving Docks are principally formed out of rock, consisting of various qualities of the new red sandstone, but some portions are on quicksand. The east wall of the Canning Dock, the whole of the wall of Salthouse Dock, and King's Dock, are dug in, and founded upon, rock. The Albert Dock and Warehouses, and the Canning Half-tide Dock, are founded partly on rock and partly on marl. The Wellington Dock, the Half-tide Dock, the Sandon Dock and Basin, and the six Graving Docks, connected with it, are founded on marl, interspersed with deep and extensive spaces of sand.

The Birkenhead Great Float and Docks are to some extent sunk in and founded on marl; but silt, mud, and quicksand are the predominant features of the foundations, being in the bed, or on the banks of Wallasey Pool: and it may give some notion of the extent of the excavations, to mention, that upwards of two million cubic yards of marl have already been dug and wheeled out of the Great Float alone, since the Birkenhead estate was transferred to the Corporation, independent of what had been dug out before, and of the large quantity which has yet to be removed from other parts of the works.

THE LENGTH AND BREADTH OF THE QUAYS.

The depth of the docks, both on the Liverpool and the Birkenhead sides of the Mersey is 35 feet. The length of

the inner walls of the Liverpool Docks is 17 miles; their thickness is, on the average, 10 feet; their height, on the average, 40 feet. The length of the inner walls of the docks at Birkenhead will be 5⅓ miles, their thickness 10 feet, and their height 40. The total length of the inner walls of the docks, on both sides of the river, will thus be 22⅓ miles, and of outer and inner walls together 27 miles.

The objects in constructing the docks of Liverpool, as well as those now forming at Birkenhead, were two-fold. The first was to form an artificial harbour, free from the storms which prevail in the estuary of the Mersey; the second was to provide, as far as possible, an unchanging water line for loading and unloading vessels, in the place of the incessantly changing lines supplied by nature, in an estuary in which the level changes four times a day, between low water and high water, and sometimes 33 feet in vertical height. In harbours in which the rise and fall of the tide is not more than five or six feet, as for instance that of New York, such costly docks as those which have been constructed in the river Mersey are unnecessary. In them mere piers or wharfs of wood or stone, built on the edge of the water, answer all necessary purposes. But in rivers or estuaries, like the Mersey, in which the tide retires far from the shore at low water, and spreads far and wide over it at high water, it is impossible to load or unload large vessels with facility, cheapness, and despatch, without forming enclosed docks, to preserve at all times an uniform, or nearly uniform, water level.

The security of shipping and a steady water line having been provided for, the next object was to furnish a sufficient length of quay frontage, for the loading

and unloading of vessels, and the erecting of warehouses, cranes, and other apparatus for that purpose. On the Liverpool side of the river, the aggregate length of the quay frontage of all the docks is 16 miles and 1,732 yards. That on the Birkenhead side, when completed, will be five miles and 786 yards. The quays on the Liverpool side of the river, cover 220 acres of ground, in addition to which there are about 300 acres of land belonging to the Dock Estate, 87 acres of which are let on rent, and 223 acres unappropriated, a large portion of the latter being on the North Shore. At Birkenhead there are 285 acres of land, which may be used, either as quay space, or may be appropriated to trading purposes.

NUMBER AND MAGNITUDE OF THE DOCK GATES, AND INCREASE IN THE SIZE OF SHIPS.

In building and forming the docks on the Liverpool side of the river, upwards of eighty pairs of dock gates have been put up during the last thirty years. These dock gates have been made wider and wider, until they have at length reached the enormous and unparalleled width of 100 feet.

The width of the gates at the entrance of the Prince's Dock, which was opened in the year 1821, was 45 feet, and that was quite wide enough for the vessels then in use, few of which were of greater burthen than 500 to 600 tons. Since that time the average size of the vessels frequenting the Port of Liverpool, has more than doubled, and in some cases, has increased five or six-fold. At the present

time the average size of the vessels frequenting the Port of Liverpool, is twice as great as that of those which frequent the Port of London. The first of these facts is evident from the circumstance, that in the year 1824, 10,008 vessels, which entered the Port of Liverpool that year, were only of the aggegate burthen of 1,180,914 tons, whilst in 1856, 20,886 vessels, which entered the port that year, were of the aggregate burthen of 4,320,618 tons. Thus, whilst the number of ships doubled, the tonnage of those ships increased four-fold. The second fact is evident from the circumstance mentioned in the "Annual Statement of Trade and Navigation," for the year 1857, that the 18,605 vessels, entered and cleared at the Port of London, in the foreign and colonial trade, were of the burthen of 4,977,991 tons, whilst the 8,531 which entered and cleared at Liverpool, in the same trades, were of the aggregate burthen of 4,935,870 tons. Liverpool is in fact the great resort of ships which traverse the ocean, as distinguished from those which trade in the narrow seas; and hence sailing ships of 1,000 to 1,500 tons, and steamers of 2,000 to 3,000 and even 3,500 tons, frequent the Mersey regularly, and require to be accommodated, in discharging, loading, and repairing.

To receive these stupendous vessels for the ordinary purposes of trade, and to repair them when injured, the entrances and gates of the docks and graving docks, used by them, have been widened, to considerably more than twice the width of the entrance into the Prince's Dock, which was formerly the widest entrance into any of the Liverpool Docks. The Britannia, the first of the British and North American mail steamers, started from Liverpool, for

Halifax, on her first voyage across the Atlantic, on the 4th July, 1840, and in the course of the same year, the Coburg Dock was opened, with a river entrance of 70 feet 1 inch. Since that time the steamers of that and of other lines have doubled, and in some cases trebled, in size, for the Britannia, the Acadia, the Caledonia, and the Columbia, were originally advertised as "The British and North American Royal Mail Steamers, of 1200 tons and 440 horse-power each." As the size of these and other similar vessels has increased, the width of the entrances into the docks has been increased to receive them. The entrance into the Huskisson Dock, which is 80 feet wide, was formed to accommodate paddle-wheel steamers, having a width of 75 feet over all; and now vessels of even greater size requiring a width of 100 feet will be able to enter from the river, through the Canada Basin and Lock into the Canada Dock, by means of gates and passages of that extraordinary width. On the Birkenhead side of the river, the new entrance into the enlarged Morpeth Dock, will be through gates and a passage 85 feet wide, and the main entrance into the Great Float, will be through gates and passages 100 feet wide.

DEPTH OF WATER AT THE ENTRANCE OF THE DOCKS.

It has been found less difficult to increase the width of the entrances into the docks, than to increase the depth of water at those entrances. The former of these objects depends on engineering and mechanical skill, the latter depends on the action of the tides, the currents, and the floating silt of the Mersey, which defy human control.

When the Old Dock was formed, in the reign of Queen Anne, the sill or base of the dock gates, at its entrance, was sunk as low as was at all necessary, at a time when the average size of all the vessels belonging to Liverpool was 100 tons, and when a vessel of 250 tons was thought large. This point, already described as "the Datum of the Old Dock Sill," is about 8 feet 9 inches above the level of low water of average spring tides. As the size and draft of water of the vessels frequenting the port has increased, the sills or entrances of the docks have been sunk lower and lower. Thus, the sill of the Prince's Dock, opened in 1821, is 5 feet 11 inches below the datum of the Old Dock sill; that of the Waterloo Dock, opened in 1834, is 6 feet 5 inches; that of the Salisbury Dock, opened in 1848, is 6 feet 11 inches; and that of the Canada Lock, leading into the Canada Dock, from the Canada Basin, which basin is to be opened in the spring of the present year, is 7 feet 9 inches. This is within a foot of the low water level of ordinary spring tides. The reason why the sills of some, at least, of these docks have not been sunk lower, is because it has been found that when they are sunk below a certain point the sand and silt collect in them, and also because of the sand bank, in front of the entrances, which is beyond control, and would render lower sills useless.

One of the principal grounds, both with parliament and the public, for supporting the plan of constructing docks at Birkenhead, has been, that the promoters of the Birkenhead docks are of opinion, that a greater depth of water, by five or six feet, can be obtained at the entrances of the docks there, than is generally obtained on the Liverpool side of the Mersey. The deep water entrances into the

Birkenhead docks are to be sunk to the depth of twelve feet below the level of the Old Dock sill, which is four feet three inches below the depth of the entrance into the Canada Dock, and from five to six feet below the average depth of the entrances into the Liverpool docks.

The following table, taken from the last chart of the river Mersey, published by authority, will show what is the average depth of water, at high water times, of spring and of neap tides, into each of the docks on the Liverpool side of the river, from the Huskisson Dock, at the north, to the Toxteth Dock, at the south. It will be seen that the maximum depth is that at the entrance of the Salisbury Dock, which is sunk six feet, eleven inches, below the datum of the Old Dock sill, and has an average depth of water, over its sill, of twenty-five feet two inches, at high water of ordinary spring tides, and at neap tides of eighteen feet two inches. The entrance to the Canada 500 feet lock, through 100 feet gates, is to be sunk nearly one foot lower than that of the Salisbury Dock; that is, to the depth of seven feet nine inches below the datum of the Old Dock sill, and the deep water entrances into the Birkenhead docks are to be sunk upwards of five feet lower, or twelve feet below the level of the Old Dock sill. If these additional depths should be maintained, there will be nearly a foot more water at the entrance of the Canada Dock, than there is at the entrance of the Salisbury Dock, and upwards of four feet more at the entrance of the Birkenhead Dock, than at the entrance of any dock at the Liverpool side of the river.

The great Low-water Basin at Birkenhead is to be sunk 20 feet 9 inches below the level of the Old Dock sill.

Average Water over the principal Dock Sills at High Water times.

Name of Dock.	Ordinary Spring.		Neaps.	
	FT.	IN	FT.	IN.
Huskisson Dock	24	9	17	9
Sandon ditto	24	9	17	9
Wellington ditto	24	3	17	3
Bramley Moore ditto	24	3	17	3
Nelson Dock, south gates	24	9	17	9
Stanley ditto	23	11	16	11
Collingwood ditto	25	0	18	0
Salisbury ditto	25	2	18	2
Clarence ditto	21	5	14	5
Clarence Half-Tide ditto, river entrance.	23	9	16	9
Trafalgar Dock	23	2	16	2
Victoria ditto	23	2	16	2
Waterloo ditto	23	2	16	2
Waterloo lock	24	8	17	8
Prince's dock	24	2	17	2
George's ditto	22	9	15	9
Canning ditto	24	6	17	6
Albert ditto	24	3	17	3
Salthouse ditto	24	3	17	3
King's Dock	23	3	16	3
Queen's ditto, north gate	20	0	13	0
Queen's ditto, south gate	21	5	14	5
Coburg Dock	23	3	16	3
Brunswick ditto	22	9	15	9
Ditto half-tide basin	24	3	17	3
Toxteth Dock	23	3	16	3

THE GRAVING DOCKS.

The graving docks, for the repairing of ships, have been increased in magnitude in the same proportion as the wet docks of the port. The width of the entrance to the Canning Graving Dock is 35 feet 9 inches. The width of the entrances into the Brunswick Graving Docks, and into one of the Queen's Graving Docks, is 42 feet. The width of the entrances into three of the Clarence Graving Docks is 45 feet. But it was necessary to provide graving docks for the largest class of steamers, of 60, 70, 80, 90,

and nearly 100 feet of breadth, across the vessel and paddle-boxes. For this purpose the entrance of the Sandon Graving Dock was made 60 feet wide, and those of one of the Sandon Graving Docks, and one of the Queen's, 70 feet wide. Even this was not sufficiently spacious, and, to meet the requirements of still larger vessels, the Huskisson Lock and Graving Dock was built with gates 80 feet wide; and now the Canada Lock and Graving Lock has been erected with entrances 100 feet wide, and a length of 167 yards, or 501 feet, at the bottom of the dock. The length of all the Sandon Graving Docks is 180 yards, or 520 feet. These works are formed of granite, and are amongst the noblest structures in the port.

THE LANDING SHEDS AND DOCK WAREHOUSES.

The quays of the Liverpool docks now cover 220 acres of ground, and all the docks, except those used for the timber trade, are surrounded by large landing sheds. They generally rest on iron columns; they are all strongly roofed; and are built up with brickwork at the outsides. The landing shed between the Wapping and the King's Docks is 90 feet wide, 575 feet long, and covered by an immense roof, resting on iron columns.

The dock warehouses of Liverpool cover 11 acres of ground, and are four stories in height above the ground floor. The area of the Albert warehouses is 22,000 square yards, that of the Wapping warehouses 6,339 square yards, and that of the Stanley warehouses 12,000 square yards. Besides having four stories above the ground floor, they

have vaults under the whole area. The area of the Birkenhead Dock Warehouses is 19,547 square yards.

THE DOCK RAILWAY.

In order to give facilities for receiving and sending off goods by railway, a line of dock railway has been formed along the docks. This railway is 7540 yards in length, or four miles and 500 yards. It extends from the north end of the Canada Dock to the extreme south end of the Harrington Dock, and has branch lines round the Toxteth Dock, into the mahogany sheds connected therewith, and to one end of the Brunswick Dock; it is also connected with the new timber yards at the Canada Dock. The dock railway has a branch running through and under the Wapping Warehouses, and around the whole of the Stanley Warehouses. This railway is used entirely for commercial purposes, and is connected with every railway station in Liverpool. The arrangements with regard to the railway accommodation at Birkenhead will also be very complete. The three great railway companies, the London and North-western, the Great Western, and the Birkenhead Lancashire and Cheshire, will all have stations, the two first having each 40,000 square yards, and the latter an area not yet determined, on what is called the South Reserve, on the edge of the great Low-water Basin, and in the midst of the docks. The lines of rails connected with those stations, and with the Birkenhead Cheshire and Lancashire Railway, are partly laid, and will be extended, as the works are completed, all round the docks and floats.

THE HIGH-LEVEL RAILWAY.

To facilitate the shipping of the coal brought from the great Wigan coal-field, a high level railway has been formed, to save time and money in shipping that bulky and low-priced article, which will not bear the cost of much labour. This line is connected with the Lancashire and Yorkshire Railway, which runs through the middle of the Wigan coal-field. It joins that line at Sandhills-lane Bridge, near Liverpool, crosses the Regent-road by a viaduct bridge, and runs along the north side of the Wellington Dock, to the south side of the Bramley-Moore Dock. The length of the high level railway is 1,000 lineal feet, and the height is eighteen feet above the level of the dock quay. The high-level railway is supported on wrought-iron girder beams of sixty feet span, twenty-five feet apart. The sides have arches, to form openings across the quays, under the railway.

THE NEW COMMUNICATION WITH THE LEEDS AND LIVERPOOL CANAL.

In order that the docks might be rendered more available to the Leeds and Liverpool Canal, that canal has been connected with the Stanley Dock, by a cut, which was opened in the year 1848. This cut or branch is 1,400 feet in length, and there are in it four locks, each of eighty feet length of chamber, and sixteen feet and a half wide. It was made for canal barges only, and through it they obtain easy admittance, not only to the Stanley Dock, but to all the other docks.

THE INTERNAL COMMUNICATIONS OF THE DOCKS.

In order to unite the whole of the Liverpool docks in one system, an internal line of water passage has been formed, from dock to dock, so that a vessel can make its way from one end of the docks to the other, without going into the river, which is always dangerous to unloaded or partially loaded vessels.

THE ROADS ALONG THE DOCKS.

A great line of road, five miles long, and seventy feet wide, though the greater part of its length, extends along the east side of the docks, from the Canada to the Harrington Dock, and is known in different parts as Regent-road, Waterloo-road, Bath-street, New Quay, Goree, Strand-street, Wapping, East Side Queen's Dock, and Sefton-street. It is paved with large square blocks of the hardest stone, for no ordinary stone will resist the pressure and wear and tear, of the enormous weights carried along it. This road is connected with the principal streets of the town, especially with Chapel-street, Water-street, Brunswick-street, South Castle-street, and other chief streets, leading to or from the line of docks, which were formed or widened by the Corporation of Liverpool, at the time when they were trustees of the Liverpool Docks, at a cost of nearly a million sterling. The goods stations of the different lines of railway, on the Lancashire side of the river, are at the sides of this great line of road, namely, the north and south stations of the London and

North-western Company, and the goods station of the Lancashire and Yorkshire and East Lancashire Railways. A road, also 70 feet in width, is formed around a considerable portion of the docks at Birkenhead, and is to be extended entirely round them. The portions of this road, on the opposite sides of the Great Float, will communicate, at the point where the East and West Floats join each other, by an embankment 75 feet wide, and an iron bridge of 100 feet span.

THE LIVERPOOL DOCKS.

Commencing at the northern extremity of the Liverpool docks, and proceeding southward, we propose to describe the docks in succession, showing their size, the especial purposes for which they were formed, or to which they have been applied, and the works which have been erected around them, for loading, landing, and despatching goods and produce, the amount of revenue which each dock furnishes to the dock estate, and the branches of trade from which that revenue is derived. We shall afterwards examine and describe the Birkenhead docks in the same manner.

THE CANADA DOCK.

Commencing at the north, the Canada Dock is the first in order, as it is also the largest dock on the Liverpool side of the Mersey, the one most recently opened for the reception of shipping, and the most perfect in its construction. The

Canada Dock contains a water area of 17 acres and 4,043 square yards, or, in round numbers, of 18 acres, and the lineal frontage of its quays is 1,272 yards.

The Canada Dock is approached by means of three passages, two of them, to the south, connecting it with the Huskisson Dock, but the third and principal passage, to the north, connecting it with the Canada Dock Basin, and through it, with the river Mersey. The two passages leading into the Canada Dock, from the Huskisson Dock, are 50 and 80 feet in width. The main entrance, however, is through a lock, connected with the Canada Basin. This lock is 500 feet in length, and is furnished at both ends with dock gates, 100 feet in width. This is the greatest width of dock gate, by 20 feet, ever constructed in the port of Liverpool; and it is considerably wider than any dock gate which exists in any other port in the United Kingdom. These gates are formed of a kind of timber known as greenheart, which grows in the forests of South America, chiefly on the banks of the Demerara and the neighbouring rivers. It possesses the double advantage of surpassing all other kinds of timber in tenacity and strength, and of being almost entirely exempt from the attacks of insects found in salt water, which destroy all other kinds of timber. These gates, although weighing many hundred tons, are opened and closed in two minutes, by bringing to bear upon them an irresistible power, supplied by hydraulic pressure, generated by the compression of a column of water, in a cylinder, erected in the tower of granite, which stands at the entrance of the dock. The lock which projects into the Canada Dock, from the Canada Basin, is large enough to receive the largest paddle-wheel steamers

which have yet been seen in the river Mersey, such as the Persia, which is nearly 400 feet in length.

The sill at the entrance of this lock is 7 feet 9 inches below the sill at the entrance of the Old Dock. The Old Dock sill is the datum or standard, by which all depths are calculated in the Liverpool dock works, and is 8 feet 9 inches above the low water level of an ordinary spring tide. In other words, there is a greater depth of water by 7 feet 9 inches at this entrance of the Canada Dock and Lock, than there was at the entrance of the first dock formed in the port of Liverpool.

The Canada Dock has been applied to the purposes of two of the principal branches of the shipping and trade of the port; that is to say, to the use of ocean steamers of the first class, and to the carrying on of the timber trade.

The west side of the Canada Dock, being the one nearest to the river, with its 500 feet lock and its 100 feet gates, is applied to the use of ocean steamers.

The eastern and northern sides are applied to the use of the timber trade,—a trade which, at Liverpool, scarcely yields in importance to the cotton and the corn trades. The land about the Canada Dock not being built upon, and being the property of the dock estate, the Mersey Docks and Harbour Board have been able to give extensive accommodation to the timber trade, which requires a large space of ground, to enable it to be carried on with economy and despatch. For this purpose the quays of the Canada Dock are made unusually large and wide. Outside these quays a road has been formed, 70 feet wide, connected with the road which extends the whole length of the docks; and adjoining the dock railway, which runs parallel to it.

This railway communicates with the stations of the Lancashire and Yorkshire, the East Lancashire, and the London and North-western Railways, indeed with all the railway stations in Liverpool, and by means of it, timber once placed on the railway trucks, can be conveyed to all parts of the Kingdom. Beyond this line of road and the dock railway, a large quantity of land, containing 124,000 square yards, belonging to the dock estate, has been divided into lots, and leased for periods of fourteen years, to several of the leading timber houses of the port. These yards are now being laid out, for the purposes of the timber trade; and each of them is to have its branch line of rails, connecting it with the dock railway, and, by means of it, with all the railways on the Liverpool side of the Mersey.

The 500 feet lock of the Canada Dock can be used as a graving dock. Its length at the bottom is 167 yards, or 501 feet; its width is 100 feet; its depth 35 feet 9 inches, and its sill is 7 feet 9 inches, under Old Dock datum.

THE HUSKISSON DOCK.

The Huskisson Dock is the next in order, proceeding southward, along the line of docks. The Huskisson Dock, besides being connected northwards with the Canada Dock, through two passages, one 50 feet and the other 80 feet wide, is connected southward with the Sandon Basin, by means of two locks. One of these locks, called "The West Huskisson Lock," is entered by gates 45 feet wide, and contains 3,650 square yards of water area, and 330 lineal yards of quay space; the other, named "The East Hus-

kisson Lock," is entered by gates 80 feet wide, and contains 4,682 square yards of water space, and 342 lineal yards of quay space.

The Huskisson East Lock is also applicable as a graving dock. Its width is 80 feet; its length along the bottom 132 yards, or 396 feet; its depth is 44 feet 6 inches. The sill of the West Huskisson Lock is 6 feet, and that of the East Lock 6 feet 6 inches, under the Old Dock datum; and the average water over the sill of the Huskisson Dock at high water, is 24 feet 9 inches, at ordinary spring tides, and 17 feet 9 inches at neap tides. The water area of the Huskisson Dock is 15 acres 993 yards, and its quay space is 1,122 lineal yards.

The amount of tonnage which entered the Huskisson Dock, in the financial year ending the 24th June, 1858, was 318,583 tons. The revenue of the Huskisson Dock that year was £30,209. Of this amount, £8,913 was derived from duties on goods entered inwards; £1,629 from goods shipped outwards; and £19,666 from shipping and lights. The trades with different countries contributed to the revenue of the Huskisson Dock, in that year, in the proportions shown by the following figures:—The United States, £17,231; the Mediterranean, £3,738; Ports between Mediterranean and Baltic, £1,209; British America, £4,198; Australia and New Zealand, £467; the Baltic, £447; East Indies, £391; West Indies and Gulf of Mexico, £203; West Coast of South America, £35; and coasting trade, £972. The prevailing trades in the Huskisson Dock are those of the United States, British America, and the Mediterranean. The chief revenue of the dock is derived from shipping and timber, and the Huskisson Dock is,

according to these figures, much more an importing than an exporting dock.

THE SANDON DOCK AND BASIN.

The Sandon Dock is the next in order, and was opened in the year 1851.

The Sandon Dock is approached through the Sandon Basin. This basin is connected with the river by an open passage, 200 feet wide, and contains 6 acres 904 square yards of water space, and 702 lineal yards of quay space.

The sill of the Sandon Dock is 6 feet 6 inches under the Old Dock datum or level; and the average water over the sill at the Sandon Dock, at ordinary springs, is 24 feet 9 inches, and at neaps 17 feet 9 inches. The water area of the Sandon Dock is 10 acres and 100 square yards, and the quay frontage is 867 lineal yards.

The tonnage which entered the Sandon Dock in the year ending the 24th June, 1858, was 44,510 tons. The earnings of the dock that year were £3,831 16s. 1d., of which £2,488 was derived from tonnage and lights, £678 from goods inwards, and £664 from goods outwards.

The trades with different countries contributed to the earnings of the Sandon Dock, in the following proportions:—The United States, £1,891; Australia and New Zealand, £576; West Coast of South America, £547; European Ports, between the Mediterranean and the Baltic, £155; West Coast of South America, £114; British America and Newfoundland, £104; West Indies and Gulf of Mexico, £89; Mediterranean, £58; Ports of the Baltic, £39; Brazils, £10; West Coast of Africa, £4; and Coasters, £242.

THE SANDON GRAVING DOCKS.

The Sandon Dock is chiefly used in connection with the Sandon Graving Docks, for the repair of large ships.

The six Sandon Graving Docks are all of them 180 yards or 540 feet in length; of these docks, No. 1 Graving Dock, East, has an entrance 60 feet wide; No. 2, an entrance 70 feet wide; No. 3, an entrance 60 feet wide; No. 4, an entrance 70 feet wide; No. 5, an entrance 45 feet wide; and No. 6, West, also an entrance 45 feet wide.

THE WELLINGTON DOCK AND HALF-TIDE DOCK.

The Wellington Dock and the Wellington Half-tide Dock are next in order, and were opened in the year 1851. The Wellington Dock and the Wellington Half-tide Dock contain respectively, the former 7 acres 4,120 square yards of water area, and 820 lineal yards of quay space; and the latter, 3 acres 813 yards of water area, and 400 lineal yards of quay space. The Wellington Dock is connected with the half-tide dock, by a passage to the west, 70 feet wide. The Wellington Half-tide Dock is connected with the Sandon Basin by two entrances, one (the east) 70 feet wide, and the other (the west) 50 feet wide.

The sill of the Wellington Half-tide Dock is 6 feet 9 inches under the datum of the Old Dock sill; the average water over the sill of the Wellington Dock, at ordinary springs, is 24 feet 3 inches, and at neaps 17 feet 3 inches.

The amount of tonnage which entered the Wellington Dock, in the financial year ending the 24th June, 1858, was

135,474 tons. The revenue of the dock was £17,611 8s. 4d. Of this amount £7,618 was derived from tonnage, £7,502 from dues on goods inwards, and £2,280 from goods outwards.

The amount contributed to the Wellington Dock and Half-tide Dock by the trades with different countries, or groups of countries, was:—The countries on the Mediterranean, £5,718; the United States, £5,346; British America, £2,584; the West Coast of Africa, £965; European Ports, from the Mediterranean to the Baltic, £883; Australia, £344; West Coast of South America, £241; the West Indies and Gulf of Mexico, £198; Ports of the Baltic, £47; Brazils, £32; Coasters, £242. The Mediterranean, the United States, and British America are the three preponderating interests of the Wellington Dock and Half-tide Basin. Tonnage dues and dues on goods inward were the principal sources of revenue in the above year.

THE BRAMLEY MOORE DOCK.

The Bramley-Moore Dock is the next in order. The water area of this dock is 9 acres 3,106 yards; the quay space 937 yards. The north passage, which connects the Bramley-Moore Dock with the Wellington Half-tide Dock, is 60 feet wide; and the south passage, which connects it with the Nelson Dock, is of the same width. They are both 6 feet below the datum of the Old Dock sill; and the average water, at high water of ordinary springs, is 24 feet 3 inches, and at neaps, 17 feet 3 inches.

The shipping which entered the Bramley-Moore Dock, in the financial year ending the 24th June, 1858, amounted

to 285,710 tons. The earnings of the Bramley-Moore Dock, in the same year, were £42,076 11s. 2d. Of this amount £20,436 7s. was derived from dues on shipping, £17,987 from goods inwards, and £3,552 from goods outwards.

The revenue of the Bramley-Moore Dock was thus derived, in 1858:—Trade with the United States, £36,220; West Coast of Africa, £1,047; West Coast of America, £974; Australia, £744; West Indies and the Gulf of Mexico, £569; Mediterranean, £467; European Ports, £96; Brazils, £111; the Baltic, £97; and Coasters, £272. The preponderating trade of this dock was that of the United States, the dock having become the favourite resort of American ships for the discharge of cargoes.

Both the Bramley-Moore and the Wellington Docks are connected with the Lancashire and Yorkshire and East Lancashire Railway, and through them with the great Lancashire coal-field by means of a high level railway. This railway was constructed by the dock trustees, for the purpose of facilitating the loading of coals, by means of the same kind of apparatus which is adopted, with so much success, at Newcastle, Cardiff, and the other great coal ports of the kingdom. The high level railway is about 1,000 feet in length; and was constructed at a cost of about £50,000. There are slips for landing cattle, both on the pier of the Bramley-Moore Dock and on that of the Huskisson Dock.

THE NELSON DOCK.

The Nelson Dock adjoins the Bramley-Moore Dock. The water area of the Nelson Dock is 7 acres 4,786 yards; the quay space is 803 lineal yards. The Nelson Dock is

joined to the Bramley-Moore Dock, on the north, by a passage 60 feet wide, and to the Salisbury Half-tide Basin, by a passage also 60 feet wide. The depth of the sill under the Old Dock datum is 6 feet 6 inches at the south entrance. The average depth of water at the south entrance of the Nelson Dock, is 24 feet 9 inches, at ordinary spring tides, and 17 feet 9 inches at neaps.

The amount of shipping which entered the Nelson Dock in the financial year ended the 28th June, 1858, was 216,549 tons; the revenue was £17,081 9s. 11d. Of this £9,580 7s. 2d. was derived from dues on shipping, £5,493 from dues on goods inwards, and £2,008 outwards.

The revenue of the Nelson Dock was thus derived in 1858:—Trade with the Mediterranean, £8,857; with the Continent, from the Mediterranean to the Baltic, £5,074; Coasters, £1,910; West Coast of South America, £307; ports of the Baltic, £257; West Indies and Gulf of Mexico, £255; Brazils, £150; West Coast of Africa, £111; West Coast of South America, £70; British America and Newfoundland, £29; East Indies, £25. The preponderating trades of this dock were those of the Mediterranean, the Coasts of Europe, from Gibraltar to Elsineur, and the coasting trade. The chief revenue was derived from shipping; and the dock was principally used for the purposes of import.

THE SALISBURY HALF-TIDE DOCK.

The Salisbury Half-tide Dock, which comes next, serves as a passage and entrance into the Nelson Dock, the Collingwood, and the Stanley Docks, and also into the Clarence Graving Dock Basin. The water area of the

Salisbury Dock is 3 acres 2,146 yards, and its quay space is 460 lineal yards. The sill of the Salisbury Dock is 6 feet 11 inches under Old Dock datum, and the average water over it, at high water of ordinary springs, is 25 feet 2 inches, and at neaps 18 feet 2 inches.

The shipping which entered the Salisbury Dock in the financial year ending June 24th, 1858, was 10,340 tons; the revenue was £1,903 1s. 9d. Of this £664 was derived from tonnage dues, £850 from dues inwards, and £409 from dues outwards.

The revenue of the Salisbury Dock was thus derived, in the last financial year:—The trade of the United States yielded £1,558; that of the East Indies, £204; that of the Mediterranean £74; that of Coasters, £31; that of the West Coast of Africa, £16; European Ports, £14; East Indies, £7; British America, £9; Brazils, £6; the Baltic, £1. The trade with the United States again preponderates. A handsome clock tower, built of granite, stands at the entrance of the Salisbury Dock, and gives time to the neighbouring docks.

THE COLLINGWOOD DOCK.

Next in order is the Collingwood Dock which, as already mentioned, communicates with the river through the Salisbury Dock. The water area of the Collingwood Dock is 5 acres 244 yards, the quay space is 553 yards. The depth of the sill is 6 feet 9 inches below the datum of the Old Dock sill; the average water, at high water of ordinary springs, is 25 feet 2 inches, and at neaps 18 feet 2 inches. The shipping which entered the Collingwood

Dock, in the financial year ended 24th June, 1858, was 203,907 tons. The revenue was £5,296 19s. 11d. Of this £4,322 19s. 9d. was derived from tonnage dues, and £974 0s. 2d. from dues on merchandise.

The revenue of the Collingwood Dock was thus derived in the last financial year:—Coasters engaged in the trade of the United Kingdom, £4,023; trade with West Coast of South America, £810; Mediterranean, £248; Brazil, £51; West Coast of South America, £43; East Indies, £41; Baltic, £32; West Indies, £18; European Ports, £13; British America, £12. The coasting trade of the three Kingdoms was the leading trade of the Collingwood Dock, and next to it the trade with the West Coast of South America.

THE STANLEY DOCK AND WAREHOUSES.

Further inland, and approached through the Salisbury and Collingwood Docks, is the Stanley Dock. The water area of the Stanley Dock is 7 acres 120 square yards, and the quay space is 753 yards.

The amount of shipping which entered the Stanley Dock in the year ending June 24th, 1858, was 234,172 tons. The revenue of the dock was £28,752 7s. 4d. Of this sum £16,893 8s. 2d. was derived from dues on tonnage, and £11,858 19s. 2d. from dues on merchandise.

The width of the west passage and dock gates at the entrance of the Stanley Dock is 51 feet. The depth of the sill under Old Dock datum is 5 feet 8 inches; and the average water, in ordinary springs, is 23 feet 11 inches, and in neaps 16 feet 11 inches.

The Stanley Dock possesses a great variety of commercial conveniences. On the north and south sides are dock warehouses, five stories high, covering a surface of 12,000 square yards. Into these warehouses goods are discharged by means of hydraulic power, as rapidly as it is possible to clear them away from the landing place. A man or a boy, raised on a stage, so that he may easily see into the hold of the vessel, from which the goods are to be taken, moves the lever, by which the power is let on or shut off, and so raises weights of many tons, by a touch. The Stanley Dock Warehouses last year yielded a revenue to the docks of £8,500.

The Stanley Dock, besides being connected with the dock railway, has the advantage of being connected with the Leeds and Liverpool Canal, by a branch canal, constructed for that purpose, at the cost of the dock estate. This branch canal is 1,400 feet in length, and is furnished with four locks, each of 80 feet length of chamber, and 16½ feet wide. By means of this branch, goods put on board the canal boats at Leeds, Bradford, Bingley, Keithley, and other manufacturing towns of the West Riding of Yorkshire, or in the great seats of Lancashire manufactures, about Blackburn, Preston, Lancaster, and as far north as Kendal in Westmoreland, as well as the coal of the great Wigan coal field, can be brought into the Stanley Dock, from the canal, in barges, and so be conveyed into all the other docks.

The revenue of the Stanley Dock is chiefly derived from the two greatest trades of the port, the American and the East Indian. The amounts yielded by those and other trades were as follow:—The United States, £16,523; the

East Indies and China, £6,590; the Mediterranean, £3,987; the West Coast of South America, £373; the West Indies and the Gulf of Mexico, £373; the West Coast of Africa, £227; the European Ports, £146; the Baltic, £70; British North America, £54; and Coasters, £167. The Stanley Dock, from its great advantages for unloading and storing, is almost entirely an import dock.

THE CLARENCE DOCK AND HALF-TIDE DOCK.

Next are the Clarence Dock, the Clarence Half-tide Dock, and the Clarence Graving Docks.

The Clarence Half-tide Dock contains 4 acres 1,794 square yards of water space and 635 yards of quay space. The width of the entrance is 50 feet, the sill is 5 feet 6 inches under the Old Dock datum, and the average depth of water, at the river entrance is 23 feet 9 inches at ordinary spring tides, and 16 feet 9 inches at neaps.

The Clarence Dock contains 6 acres, 273 square yards of water space, and 914 yards of quay space. The width of the entrance is 47 feet. The depth of the sill is 3 feet 2 inches under Old Dock datum, and the average depth of water is 21 feet 5 inches at ordinary springs, and 11 feet 5 inches at neaps.

The tonnage which entered the Clarence Dock in the year ending June 24, 1858, was 427,503 tons. The revenue of the Dock was £8,544 5s. 6d.

The Clarence Half-tide Basin the same year received shipping of the burden of 120,162 tons, and yielded a revenue of £2,292 9s. 10d.

Nearly the whole revenue of the Clarence Dock and the Clarence Half-tide Docks is derived from steamers engaged in the coasting trade. Of the revenue of the Clarence Dock, £8,413 16s., was derived from dues on the vessels, chiefly steamers, engaged in the coasting trade of England, Scotland, and Ireland, and only the following trifling sums from trades with foreign countries:—Mediterranean, £54 15s.; British North America, £13 10s. 7d.; Ports between the Baltic and the Mediterranean, £8 17s. 7d.; Brazil, £17 5s. 3d.; West Coast of South America, £32 6s. 3d.; East Indies, £2 10s. 8d.; Baltic Ports, 18s. 9d. The whole revenue of the Clarence Half-tide Dock was also derived from tonnage dues on coasters, chiefly steamers, and amounted to £2,292 9s. 10d.

The average depth of water over the sill of the Clarence Dock, at high water of ordinary spring tides, is 21 feet 5 inches; and at high water of neap tides 14 feet 5 inches The average water over the Clarence Half-tide Dock, at the river entrance, at high water of ordinary spring tides is 23 feet 9 inches; and at neaps 16 feet 9 inches.

THE CLARENCE GRAVING DOCKS

The Clarence Graving Docks are two in number, but are so arranged internally as to receive four vessels at once. The dimensions of the graving docks are respectively 135 and 97, and 138 and 96 lineal yards in length. They open into the Clarence Graving Dock Basin, by two passages, one 45 feet wide, with a depth of 4 feet 9 inches, under the Old Dock sill, the other, also 45 feet wide, with a depth of 4 feet 6 inches under Old Dock datum.

The water area of the Clarence Graving Dock Basin is 1 acre 1,056 yards, and the quay space is 291 yards.

THE TRAFALGAR DOCK.

The Trafalgar Dock contains 5 acres 4,546 square yards of water space, and 764 yards of quay space. The width of the entrance is 45 feet. The depth of water at the entrance of the Trafalgar Dock, at high water of ordinary spring tides, is 23 feet 2 inches; and at neaps 16 feet 2 inches.

The Trafalgar Lock, leading into the Trafalgar Dock from the Clarence Half-tide Basin, contains 2,937 square yards of water space, and 256 yards of quay space. The entrance into the Trafalgar Lock is 45 feet in width. Its sill is 6 feet 7 inches under Old Dock datum, and the depth of water at high water of ordinary spring tides is 23 feet 2 inches; and at neaps 16 feet 2 inches.

The shipping which entered the Trafalgar Dock in the year ending June 24, 1858, was 206,492 tons; and the revenue of the Trafalgar Dock, in the financial year ended the 24th June, 1858, was £4,100 13s. 5d. Of this £3,882 9s. 9d. was derived from tonnage, and only £218 3s. 8d. from merchandise. This revenue, like that of the Clarence Dock, was derived almost entirely from vessels engaged in the coasting trade of the three kingdoms. The sum of £3,854 4s. 1d. was received from that source; in addition to which the trade of the West Coast of South America, yielded £83; that of the Mediterranean, £60; that of the West Indies, £55; and that of the ports between the Mediterranean and the Baltic, £11.

THE VICTORIA DOCK.

The Victoria Dock contains a water space of 5 acres 2,790 square yards, and a quay space of 755 lineal yards. The width of the entrance is 40 feet; the sill is 4 feet 11 inches under Old Dock datum; and the average depth of water over the sill, at high water of ordinary spring tides, is 23 feet 2 inches, and 16 feet 2 inches at neaps.

The shipping which entered the Victoria Dock in 1858 was 96,325 tons; its revenue £12,952.

The Victoria Dock is more equally divided amongst the principal trades of the port, the American still taking the lead. The amounts derived from each trade were as follow: United States, £5,392; Mediterranean, £1,737; European Ports on the Atlantic £1,529; East Indies and China, £1,172; West Indies and Gulf of Mexico, £1,365; West Coast of South America, £416; Baltic, £355; Brazil, £280; West Coast of Africa, £293; Australia, £74; British America, £72; Coasters, £272. The Victoria is also principally an import dock.

THE WATERLOO DOCK.

The Waterloo Dock contains a water area of 5 acres 2,790 square yards, and a lineal quay space of 700 yards.

The average depth of water at the entrance of the Waterloo Dock, at high water of ordinary spring tides, is 23 feet 2 inches, and at neaps 16 feet 2 inches.

The shipping of the Waterloo Dock, in the financial year ended the 24th June, 1858, amounted to 234,727 tons; its revenue to £30,594.

Connected with the Waterloo Dock is the Waterloo Lock, containing a water area of 2,937 square yards, and a quay space of 256 yards. The depth of water at the Waterloo Lock is, at high water of ordinary spring tides, 24 feet 8 inches, and at high water of neap tides 17 feet 8 inches, the sill of the Waterloo Lock being 6 feet 5 inches under the Old Dock datum at the north passage, and 6 feet 8 inches at the south entrance. The width of entrance in both cases is 45 feet.

The Waterloo Dock is another dock which is almost filled by the trade with the United States. The amount yielded by the trade of the United States to the revenue of this dock was £27,714; by the trade of the Mediterranean, £513; of the West Indies, £403; the Baltic Ports, £311; European Ports in the Atlantic Ocean, £339; Brazil, £98; Australia, £76; West Coast of South America, £64; West Coast of Africa, £31; and Coasters, £539. The Waterloo Dock is chiefly an import dock. Its vicinity to the goods station of the London and North-Western Railway, gives it great advantages for the trade with Manchester, and with the towns along the whole of the London and North-Western Railway.

The Observatory stands on the pier between the Waterloo and the Prince's Dock.

THE PRINCES' DOCK.

The Prince's Dock contains an area of 11 acres 3,899 square yards, and a quay space of 1,614 yards. The depth of water at the entrance of the Prince's Dock at high

water, of ordinary spring tides, is 24 feet 2 inches, and at neaps 17 feet 2 inches.

The revenue of the Prince's Dock, in the financial year ended the 24th June, 1858, was £28,581 17s. 7d. Of this sum £12,816 9s. was derived from tonnage dues, and £15,765 8s. 7d. from merchandise. The tonnage which entered the Prince's Dock in that year was 215,474 tons.

The Prince's Dock is also furnished with locks, and is entered by two passages,—the north, 45 feet; the south, 44 feet 11 inches wide; the sill of both 5 feet 11 inches under Old Dock datum; and the average depth at high water, of ordinary spring tides, is 24 feet 2 inches, and at neaps 17 feet 2 inches.

The Prince's Dock, which was formerly filled with the trade of the United States, is now divided amongst many trades, the East Indian and China, the West Indian and the Brazilian taking the lead. The amounts from the different branches of trade were as follow:—The East Indies and China, £8,782; West Indies and Gulf of Mexico, £5,110; Brazil, £4,699; West Coast of South America, £2,406; United States, £1,967; British North America, £1,745; Australia, £1,411; European Ports, £703; Mediterranean £546; West Coast of Africa, £272; Baltic, £140; and Coasters, £786.

THE GEORGE'S DOCK.

The George's Dock and passage contains 5 acres 2,593 square yards of water area, and 100,1 yards of quay space. The depth of water over the sill of the George's Dock at

high water, ordinary spring tides, is 22 feet 9 inches, and at neaps 15 feet 9 inches.

The shipping which entered the George's Dock in 1858 amounted to 105,263 tons. Its revenue in the last financial year was £9,570, of which £4,653 was derived from goods inward, and £2,236 from goods outwards.

The West Indian, Brazilian, and Mediterranean trades preponderated, last year, in the George's Dock. The different branches of trade contributed as follows, to the income of the dock:—West Indies, £2,284; Brazil, £2,223; European Ports, £1,497; Mediterranean, £1,306; British North America, £438; West Coast of South America, £410; West Coast of Africa, £231; Baltic, £162; Australia, £51; United States, £10. The dues on imports and exports are nearly equal in the George's Dock.

THE MANCHESTER DOCK.

The Manchester Dock, constructed for the use of vessels engaged in the river trade, contains 1 acre 595 square yards of quay space. The width of the entrance is 32 feet 10 inches. The sill is 3 inches above Old Dock datum.

The Manchester Lock contains a water area of 315 yards, and a quay space of 57 yards. The entrance is 33 feet 8 inches in width, and the sill is 3 feet 9 inches under Old Dock datum.

THE CANNING DOCK.

The Canning Dock contains 4 acres 376 square yards of water area, and has a quay space of 585 yards. The

width of entrance is 45 feet. The sill is 6 feet 5 inches under the Old Dock datum, and the average depth of water over the sill of the Canning Dock, at high water of ordinary spring tides, is 24 feet 6 inches, and at neaps 17 feet 6 inches.

The Canning Half-tide Basin, connected with the Canning Dock, contains 2 acres 2,689 yards of water area, and 429 yards of quay space. The two west passages are both 45 feet wide. The average depth of water is 24 feet 6 inches at high water, of ordinary spring tides, and 17 feet 6 inches at neaps.

The shipping which entered the Canning Tide and Half-tide Dock in 1858 was 102,470 tons. The revenue was £3,083, of which £2,353 was from tonnage, £484 from goods inwards, and £245 from goods outwards. This dock derived its income in 1858, from the following sources:—Coasters, £1,967; European Ports, £569; Mediterranean, £233; West Coast of Africa, £143; British North America, £41; West Coast of America, £34; United States, £29; Baltic, £24; East Indies, £19; West Indies, £13.

THE CANNING GRAVING DOCK.

There are two graving docks connected with the Canning Dock. Of these, No. 1 is 147 yards in length, and No. 2 169 yards. The entrances of both are 35 feet 9 inches wide.

THE ALBERT DOCK.

The Albert Dock contains 7 acres 3,542 square yards of water area, and 885 yards of quay space. The depth of

water at the entrance of the Albert Dock at high water of ordinary spring tides, is 24 feet 3 inches, at neaps 17 feet 3 inches. The tonnage which entered the Albert Dock in 1858 was 260,441 tons.

The Albert Dock is surrounded by an immense pile of dock warehouses, into which the cargoes of vessels are discharged, by means of hydraulic power.

In the upper story of the Albert Dock is a large room, fitted up for the sale of sheep's wool, with windows only to the north to insure a perfectly steady light. There is also a large room on the same floor, for the storing of ivory.

The revenue of the Albert Dock in 1858 was £34,524.

The Albert Dock is the chief East India and China dock, its dock warehouses giving it great advantages for that trade. In the last financial year its earnings were derived from the different trades of the port, in the following amounts:—The East India and China trade, £19,870; the United States, £5,093; the Brazilian, £3,071; West Coast of South America, £1,721; the West Indies, £1,800; the Mediterranean, £1,216; West Coast of Africa, £721; British America, £379; Australia, £342; European Ports, £153; Baltic, £62; and Coasters, £82.

THE SALTHOUSE DOCK.

The Salthouse Dock contains 6 acres 2,019 square yards of water space, and a quay space of 784 yards. The depth of water at the entrance of the Salthouse Dock at ordinary spring tides, is 24 feet 3 inches, at neaps 17 feet 3 inches. The width of the entrance is 45 feet, its sill is 6 feet under Old Dock datum.

The tonnage which entered the Salthouse Dock in 1858 was 5,267 tons.

The revenue of the Salthouse Dock, in 1858, was £3,759. Of this £125 was derived from tonnage, £84 from goods inward, and £3,543 from goods outward.

The Salthouse Dock is one of the favourite docks of the East India and China trade, for loading vessels. The earnings of the dock from different trades were as follow: East India and China, £1,796; West Coast of South America, £793; Brazil, £416; Australia, £198; West Indies, £159; British North America, £148; West Coast of Africa, £118; Mediterranean, £32; United States, £23; European Ports, £3; Baltic, £1; Coasters, £62.

THE WAPPING DOCK.

The Wapping Dock contains 5 acres, 499 square yards of water area, and 1,815 yards of quay space. The width, both of the west and south passages, is 50 feet; the sill is 6 feet under the Old Dock datum.

The shipping which entered the Wapping Dock was of 66,008 tons burthen.

The revenue of the Wapping Dock in 1858 was £10,817, of which £4,681 was derived from tonnage and lights, £5,742 from goods inward, and £383 from goods outward.

The revenue of the Wapping and Half-tide Docks is also chiefly derived from the East India and China trade, the dock warehouses at the Wapping Dock, like those at the Albert and the Stanley, giving great facilities. The earnings of the Wapping Dock were derived from different

trades, as follows:—East Indies and China, £5,371; United States, £1,857; West Coast of Africa, £1,969; Brazil, £800; West Coast of South America, £582; West Indies, £380; Mediterranean, £229; British North America, £216; Baltic, £137; European Ports, £119; Australia, £13; Coasters, £58.

THE KING'S DOCK.

The King's Dock contains a water area of 7 acres, 3,896 square yards; and a quay space of 875 yards. The depth of water on the sill of the King's Dock, at high water of ordinary spring tides, is 23 feet 3 inches, at neaps 16 feet 3 inches.

The shipping which entered the King's Dock in 1858 was of the burthen of 127,215 tons.

The revenue of the King's Dock in 1858 was £14,735: of this amount £7,423 was from tonnage and lights, £7,313 from goods, of which £5,462 were goods inward, and £1,538 goods outward.

The Mediterranean trade takes the lead at the King's Dock. The earnings of the dock last year were as follow: Mediterranean, £3,723; United States, £2,177; European Ports, £1,753; the Baltic, £1,717: the West Indies, £1,712; the Brazils, £1,156; British North America, £788; West Coast of South America, £502; West Coast of Africa, £243; East Indies, £330; Coasters, £606.

THE DUKE'S DOCK.

The Duke's Dock, so named in honour of the great

Duke of Bridgewater, lies between the Albert and Salthouse Docks, to the north, and the Wapping and the King's Dock, to the south. When this dock was constructed, by Brindley, the celebrated engineer of the duke's canals, the only public dock near it was the Salthouse Dock, and at that time there were only three docks to the north of it, and not one to the south. The Duke's Dock is still the Liverpool terminus of the two principal lines of water communication, from this port to Manchester, both of which are now the property of the heirs of the great duke. They are still much used, and are still very useful, for canals and navigable rivers have stood the competition of railways much more successfully than high roads.

THE TOBACCO WAREHOUSE.

The public Tobacco Warehouse, covering several acres of ground, and built by the Corporation, at a cost of £68,000, lies on the west side of the King's Dock, between the dock and the pier, facing the river; and on the east side of the dock is a gigantic landing shed, filling up the whole distance between the King's Dock and the Wapping Dock. This shed is 90 feet wide, and 575 feet in length, the roof resting on massive columns of iron.

THE QUEEN'S DOCK.

The Queen's Dock contains 10 acres, 1,568 square yards, of water space. The entrance of the west passage is 50 feet wide, that of the south passage, 60 feet. The entrance

to the Queen's Dock from the river is through the Queen's Basin, which has a water space of 3 acres, 3,542 square yards, and a quay space of 445 yards. The basin is connected with the river, by two gates, 70 and 50 feet wide.

The average depth of water, at the north gate, at ordinary spring tides, is 20 feet, and at neaps 13 feet; at the south 21 feet 5 inches at springs, and 14 feet 5 inches at neaps.

The shipping which entered the Queen's Dock was 153,911 tons. The revenue of the dock in that financial year was £19,798: of this amount £10,434 was derived from tonnage and lights, and £9,364 from goods, £6,693 from goods inward, and £2,622 from goods outward.

The Wapping Goods Station of the London and North Western Railway, lies close to the Queen's Dock, as well as to the Wapping Dock and the King's. It gives those three docks the same advantages, for communicating with Manchester, Birmingham, and London, by railway, which the Northern Station gives to the Victoria, Waterloo, and Trafalgar Docks. The Wapping Station also gives advantages, of the same kind, to the Salthouse and Albert Docks, on one side, and to the Coburg and Brunswick Docks, on the other.

The trade of British North America takes the lead at the Queen's Dock. The earnings of this large and useful dock were as follow:—British North America and Newfoundland, £5,841; United States of America, £3,707; the Mediterranean, £1,973; Australia, £1,746; West Coast of Africa, £1,491; East Indies and China, £1,318; European Ports, £1,212; West Indies, £698; the Baltic, £808; Brazil, £381; Coasters, £178.

THE COBURG DOCK.

The Coburg Dock contains 8 acres 26 square yards, and a quay space of 1,053 yards. The west entrance is 70 feet 1 inch in width. The sill is 6 feet under Old Dock datum, and the average water over the sill is 23 feet 3 inches, at high water of ordinary spring tides, and 16 feet 3 inches at neap tides.

The shipping which entered the Coburg Dock in 1858 was of the burthen of 46,478 tons.

The revenue of the Coburg Dock, in the financial year 1858, was £6,094. Of this £3,097 was derived from dues on shipping, and £2,996 from duties on goods; £2,831 inward, and £165 outward.

The earnings of the Coburg Dock in 1858 were thus derived :—The United States, £3,167 ; Mediterranean, £691 ; Baltic, £367 ; European Ports, £477 ; East Indies, £271 ; West Coast of Africa, £187 ; West Coast of South America, £134 ; West Indies, £98 ; Brazil, £82 ; Australia, £35 ; British South America, £25 ; Coasters, £58.

The Coburg Dock was built for the accommodation of the great ocean steamers, but they have now chiefly removed to the Huskisson and the Canada Docks.

THE BRUNSWICK DOCK.

The Brunswick Dock contains a water space of 12 acres 3,010 square yards, and a quay space of 1,086 lineal yards. The entrance is 60 feet wide; the sill 6 feet 6 inches under Old Dock datum; the depth of water, at highwater of ordinary spring tides, is 22 feet 9 inches, at neaps, 15 feet 9 inches.

The shipping which entered the Brunswick Dock in 1858 was 200,663 tons.

The revenue of the Brunswick Dock in the financial year 1858, was £23,699. Of this amount £14,548 was derived from dues on tonnage, £9,129 from dues on goods, £8,243 inwards, and £579 outwards.

The Brunswick Dock has long been the great dock for the British and North American and timber trade. Its earnings last year were derived from the following sources: British North America, £16,133; the United States, £5,494; the Baltic, £886; the West Indies and Gulf of Mexico, £345; the West Coast of Africa, £76; European Ports, £46; Mediterranean, £22; Brazil, £29; Australia, £13; and Coasters, £72.

THE TOXTETH DOCK.

The Toxteth Dock has an entrance 40 feet wide, a sill 5 feet under Old Dock datum. Its water space is 1 acre 469 yards. The average depth of water at the entrance of the Toxteth Dock is 23 feet 3 inches, at high water of ordinary spring tides, and 16 feet 3 inches at neaps.

The revenue from the Toxteth Dock was £2,572. Of this £1,420 was derived from tonnage, £1,152 from goods; £1,108 inwards, and £450 outwards.

The West Indian and American trades prevail at the Toxteth Dock. The earnings of each branch of trade were as follows at this dock:—West Indies and Mexico, £1,348; British North America, £673; West Coast of South America, £160; United States of America, £121; European Ports, £76; East Indies, £47; Baltic, £41; Brazil, £16; Coasters, £81.

THE HARRINGTON DOCK.

The Harrington Dock has a water space of 3,740 square yards, and a quay space of 315 lineal yards.

The last of the docks, the Harrington, is chiefly used in the trade with the West Coast of South America. Its earnings were as follow:—West Coast of South America, £1,256; West Indies, £23; British North America, £34; European Ports, £13; Mediterranean, £2; East Indies, £1; Coasters, £337.

The revenue of the Harrington Dock was £1,671. Of this sum £840 was derived from tonnage, and £831 from goods; nearly the whole of the latter, £827, being from merchandise inward, and only £2 from merchandise outward.

THE LANDING STAGES.

In addition to the docks and quays, two landing stages, of enormous magnitude, have been constructed, on the Liverpool side of the river, for the use of passengers and steamers, and a third is about to be constructed at Birkenhead, for the same purposes.

The Ferry Landing Stage, opposite the George's Pier, constructed for the convenience of the traffic with all the ferries on the Cheshire side, is 500 feet long, by 80 feet wide. It floats on 35 iron pontoons, and is approached on the land side by two bridges, 150 feet in length, which rise and fall with the tide. The stage is moored by two breast chains, attached diagonally to the quay wall, and there are also moorings at each end, as safeguards, but they are never used.

The New Landing Stage, for sea-going steamers, is of much greater length. It is 1,000 feet long by 80 feet wide, and has four bridges, each 110 feet 9 inches long. It is moored by four breast chains, attached diagonally to the quay walls. This stage floats on 63 pontoons.

The Birkenhead Landing Stage will be 800 feet long. A portion of it, 300 feet in length, will be appropriated to the ferry traffic, and the remaining 500 feet will be applied to the use of sea-going steamers.

These landing stages are amongst the greatest improvements ever introduced into the port of Liverpool. They are perfectly accessible at all states of the tide, and, when finished, will form together an addition of upwards of 2,000 feet, to the quay accommodation of the port.

THE NEW BIRKENHEAD DOCKS: THE GREAT FLOAT.

The Birkenhead docks, when completed, will consist of the following extensive works:—First, of two large floats, containing together upwards of 111 acres. These are named the Eastern and Western Floats, and are to be united with each other, by a passage and gates 100 feet wide. They are both to be formed in the ancient bed of Wallasey Pool.

THE WESTERN FLOAT.

The Western Float, the further from the river, will contain 52 acres 319 square yards of water area, and a quay space, 2 miles 210 yards in length. This immense

float has now been sunk to an uniform depth of 35 feet, and dock walls are in course of construction around it, of the thickness of 10 feet.

THE EASTERN FLOAT.

The Eastern Float will contain 59 acres 3,786 square yards, and a quay space of 1 mile 1,506 lineal yards. The Eastern Float, like the Western, has been sunk to an uniform depth of 35 feet; walls, of equal magnitude with those already spoken of, are now building around it. Upwards of 2,000,000 cubic yards, of clay and earth, have been dug out and cleared away from the two floats.

THE ENTRANCES FROM THE RIVER.

The main entrance into the East Float, and through it to the West Float, from the river, will be by means of three passages, one 30 feet wide, another 50 feet wide, another 100 feet wide. These passages will admit vessels from the river Mersey, into an area or dock space of $7\frac{1}{2}$ acres, and from this area or dock, they will proceed, through three other passages, of equal width, into the Eastern Float.

The deep water entrances from the river, into the Great Float, are to be sunk to the depth of 12 feet under the Old Dock datum.

THE EMBANKMENT ACROSS THE FLOATS.

The Eastern and Western Floats will be divided from each other, by a permanent embankment, but a passage,

100 feet wide, will keep open the communication between the two floats, and a moveable bridge, across this passage, will maintain the communication between the Birkenhead and the Seacombe sides of the embankment.

THE GREAT LOW WATER BASIN.

The Great Low-water Basin, which forms another important part of the Birkenhead plan, is to contain a water area of 14 acres, and will form a parallelogram 300 feet wide, and 1,600 feet in length. This Low-water Basin will be open at all times to the river, and, to prevent its being filled up by the sand and mud, which are carried along in such large quantities by the waters of the Mersey, it is to be sluiced or scoured out, by discharging through it, at low water, a certain portion of the tidal waters, received into the Great Float at high water. The sluices are to have a sectional area of not less than 800 feet, and the quantity of water discharged through them, at an 18 feet tide, will be 28,000,000 cubic feet. The Low-water Basin is also to have a communication with the Great Float, by means of a lock, 50 feet wide, and 240 feet in length.

THE SECOND LOW-WATER BASIN.

Another Low-water Basin, open at all times to the river, is to be formed near the present entrance of the Morpeth Dock, for the accommodation of small vessels, engaged in the trade of the river and also of coasters.

THE ENLARGED MORPETH DOCK.

Through this second Low-water Basin, near the point where it joins the river, a new passage, 85 feet in width, is to be made into the Morpeth Dock, which is to be enlarged, to the size of 11 acres, and to have another communication with the Low-water Basin, first spoken of, through a passage 85 feet wide. The river entrance to this dock will also be sunk 12 feet below the level of the Old Dock sill. At present the Morpeth Dock contains less than four acres of water space.

THE EGERTON DOCK.

The Egerton Dock, of nearly 4 acres, will remain with little alteration. It will be connected, as at present, with the Morpeth Dock, and through it with the smaller Low-water Basin and the river, at one end, and with the Great Float at the other. The Egerton and the Morpeth Docks are the only docks now in use at Birkenhead.

There will thus be five separate passages leading from the Great Floats, and the docks, into the river. They will all be strongly secured against storms, by double gates.

THE BIRKENHEAD LANDING STAGE.

Beyond the second Low-water Basin, and in front of the Woodside Slip, a landing stage will be erected, 800 feet in length, to which steamers will be able to approach, in all states of the tide. Five hundred feet of this landing stage will be applied to the use of the larger class of steamers, engaged in the trade with Ireland, Scotland,

and the coasts of England and Wales. The remaining 300 feet will be applied to the accommodation of the immense and ever-increasing personal communication between Liverpool and Birkenhead.

THE BIRKENHEAD DOCK ESTATE.

The items of receipt and expenditure from 1st January to 24th June, 1858, were as follow:

Dr.	£	s.	d.	Cr.	£	s.	d.
To Cash received for Dock Rates	3,441	1	6	By Disbursements on account of New Works, viz.:			
„ Use of Gridiron	100	15	0	Great Float	25,557	0	6
„ Use of Cranes	44	16	8	Great Float, North Wall	4,108	6	5
„ Rent of Customs' Depôt	30	0	0	River Wall, opposite the South Reserve	1,937	5	2
„ „ Wharf, Land, &c.	1,322	9	4	Materials unexpended, viz.:—Iron, Timber, Limestone, & Stone.	11,864	14	4
„ „ Land Herculan'm Estate	1,014	5	5	General Repairs	5,953	5	0
„ „ Dock Cottages	773	15	2	Salaries	820	10	11
	£6,727	3	2	Miscellaneous	734	12	4
Due to A. Heywood, Sons, and Co., Bankers	44,248	11	6				
	£50,975	14	8		£50,975	14	8

AREA OF OF THE DOCK ESTATE ON BOTH SIDES OF THE RIVER.

The whole area of the dock estate, on the Liverpool side of the Mersey, is about 807 acres, and it is thus divided:

Docks	212½	acres.
Basins	23½	„
Graving Docks	13	„
Warehouses	11	„
Nova Scotia Property	7	„
Quays	220	„
Ground let on rent	87	„
Marine Parades	10	„
Unappropriated	223	„
Total	807	„

The area of the Birkenhead Dock Estate is 443½ acres. Of this 158 acres will be water space, and 285 will remain for quays, and land to be appropriated to trading purposes. The total extent of the estate of the Mersey Dock and Harbour Trust is thus, as follows :—

On the Liverpool side	807 acres.
On the Birkenhead side	445½ ,,
	1,252 ,,

THE ENGINEER'S REPORT ON THE PROGRESS OF THE BIRKENHEAD DOCKS.

The following report, as to the progress of the works, at Birkenhead, made by Mr. John B. Hartley, the engineer of the docks, to the dock solicitor, in the latter part of December, was read by the chairman of the Mersey Docks and Harbour Board, at the meeting of the Board, held on the 15th of January, of the present year, 1859 :

"The progress we have made with the Birkenhead Docks is as follows :—We have built about one-third of the wall on the north side of the Great Float; we have excavated about 50,000 cubic yards, in the formation of the large Low-water Basin; we have built about one-half of the north wall of the enclosure of the Woodside Basin; we have put in the foundations, of about 100 feet, of the River Wall of the South Reserve—a most difficult work, owing to the depth and nature of the quicksand; and we are progressing with the works, at the large new lock, to enter the enlarged Morpeth Dock; we have also entered into a contract with Mr. William M'Cormick for the excavation

of the whole of the earthwork, necessary for the completion of the works, as sanctioned by parliament, involving the payment of about £140,000. We have spent this year upon, and on account of these works, £115,000; the number of men now employed in the formation of the Birkenhead Docks is about 1,860, but they are being added to constantly, as we are able to get to work at different points. Our weekly expenditure has averaged about £1,900; but this is now also being increased weekly, as we transfer the workmen from this side, and are able to employ them at Birkenhead."

THE NAVIGATION OF THE MERSEY AT THE COMMENCEMENT OF THE YEAR 1859.

The annual report of Rear-Admiral George Evans, the acting conservator of the port, to the Conservancy Board, dated January 31st, 1859, brings down the history of the navigation of the Mersey to the present time. The following passages from the report complete the account of the port, given above.

"The navigation of the river Mersey continues in a most satisfactory state, both as regards the sea channels leading to the port of Liverpool, as also those of the upper estuary, between Liverpool, Runcorn, Frodsham, and Warrington.

"The survey of the northern channels, made during the summer of 1858, by Lieutenant Murray T. Parks, R.N., the talented marine surveyor of the port, exhibits a progressive improvement in the Queen Channel, the entrance to

which from the sea is now indicated by one of Mr. Herbert's patent black pillar buoys, bearing a bell, elevated 30 feet above the water line.

"The admirable way in which Mr. Herbert's patent buoys float, at so great an elevation, has induced the Mersey Docks and Harbour Board to order eight more of his buoys to be moored in the Queen Channel, which will afford additional security during dark nights or foggy weather, as well as distinguishing that channel from the others.

"The crews of the Liverpool life-boats have distinguished themselves as usual, by assisting 21 vessels in distress, and saving the lives of 42 persons, during the past year 1858.

"The returns state that 46,524 vessels passed in and out of Liverpool during the year 1858, being 7,764 vessels less than the previous year 1857, a circumstance to be attributed most probably to the effects of the mercantile panic during that period, as well as to the great increase in the size of the ships.

"It is gratifying to state that this prodigious number of vessels, averaging 128 per diem, were conducted through the various channels and quicksands of the port, by the skilful pilots of Liverpool, with only the loss of a brigantine and a schooner under their charge, and both these small craft were intrusted to apprentices. The schooner, loaded with salt, was sunk by collision, and the brigantine was lifted and placed on the beach at the Magazines.

"The only dock works of consequence done on the Liverpool side of the river Mersey, during the year 1858, has been the opening of the Canada Dock for shipping and the completion of the Canada Basin.

"They are removing the stank, between the Canada Basin and the river, to enable ships to pass through the basin into the Canada Dock.

"About 160 yards of the north wall, which is to enclose the Woodside Basin, has been built up to the coping.

"About 130 feet of the river wall of the South Reserve has been built up to the level of the Old Dock sill. Great difficulty has been experienced in getting in the foundations of this portion of river wall, owing to the nature of the soil at the bottom.

"The excavations of the deep Low-water Basin have been carried on most vigorously; upwards of 75,000 cubic yards have been removed.

"Nearly one-third, or about 900 lineal yards, of the wall on the north side of the Great Float are completed.

"Half the main sewer, between the Great Float and Seacombe point, has been finished, and about 189 lineal yards of the river wall, to protect the land between Seacombe and Egremont, has been constructed.

"Some idea may be formed of the vigour with which Mr. Hartley, the eminent Liverpool dock engineer, is going on with these works, from his having 2,300 men employed on them, and increasing that number daily as the work opens out. Unfortunately Mr. Hartley's labour and anxiety have been greatly increased at Birkenhead, in consequence of the tumbling down of the contract walls of the Great Float, (which walls were erected previously to the transfer of the property to the Mersey Docks and Harbour Board,) and which afford a striking contrast to Mr. Hartley's father's magnificent dock works at Liverpool, a stone of which, to my knowledge, has never given way."

TABLE OF THE DIMENSIONS OF THE LIVERPOOL AND BIRKENHEAD DOCKS.

The following table shows the area of water, quay space, width of entrance, and depth of sill for each dock, also the length of graving docks, &c., in 1858:

LIVERPOOL DOCKS.	Width of Entr'ce.	Sill under Old Dock Datum.	Coping at Hollow Quoins above Sill.	Water Area.	Quay Space.
	Ft. In.	Ft. In.	Ft. In.	Acr. Yd.	Mile.Yd
Canada Dock	.. ..	.. ..	.. ..	17 4043	1272
South Passages.....East	50 0	6 6	35 6		
West	80 0	6 6	35 6		
500-feet Lock	100 0	7 9	35 9	1 3479	487
Huskisson Dock	.. ..	.. ..	.. ..	14 3451	1122
Huskisson East Lock.....	80 0	6 6	44 6	0 4682	342
Huskisson West Lock.....	45 0	6 0	32 0	0 3650	330
Sandon Dock....West Entrance	70 0	6 6	37 6	10 100	867
Wellington Hf-tide Dk., East En.	70 0	6 9	34 9	3 813	400
West Entrance	50 0	6 6	32 6		
Wellington Dock ..West Passage	70 0	6 0	37 0	7 4120	820
Bramley-Moor Dk., North Pass.	60 0	6 0	32 0	9 3106	935
South Passage	60 0	6 0	32 0		
Nelson Dock ....South Passage	60 0	6 6	32 6	7 4786	803
Stanley Dock ....West Passage	51 0	5 8	34 8	7 120	753
Collingwood Dock, West Passage	60 0	6 9	32 9	5 244	553
Salisbury Dock	.. ..	.. ..	.. ..	3 2146	406
West Entrances .... North	60 0	6 11	32 11		
South	50 0	6 11	32 11		
Clarence Graving Dock Basin { North Pass.	45 0	4 9	30 9	1 1056	291
South Pass.	45 0	4 6	31 0		
Clarence Half-tide Dk., West En	50 0	5 6	34 0	4 1794	635
Clarence Dock....West Passage	47 0	3 2	29 2	6 273	914
Trafalgar Lock, N. & S. Passages	45 0	6 7	30 5	0 2937	256
Trafalgar Dock ..South Passage	45 0	4 11	31 4	5 4546	764
Victoria Dock....South Passage	46 0	4 11	31 3	5 3559	755
Waterloo Dock	.. ..	.. ..	.. ..	5 3056	737
Waterloo Lock....North Passage	45 0	6 5	33 0	0 2937	256
South Entrance	45 0	6 8	33 3		
Prince's Dock & Locks, N. Entr.	45 0	5 11	34 1	11 3889	1613
South Entrance	44 11	5 11	34 1		
George's Dk. & Passage, N. Ent.	41 11	4 6	29 0	5 2593	1001
South Passage	40 1	4 6	28 11		
		Sill above Old Dock Datum.			
Manchester Dk., West Entrance	32 10	0 3	23 0	1 595	339
		Sill under Old Dock Datum.			
Manchester Lock, West Entrance	33 8	3 9	28 0	0 315	57
Canning Dock ....West Passage	45 0	6 3	32 3	4 376	585
Canning Half-tide Basin	.. ..	.. ..	.. ..	2 2688	429
Two West Entrances ..each	45 0	6 4	34 6		
Albert Dock.....North Passage	45 0	6 4	32 4	7 3542	885
East Passage	45 0	6 0	32 0		

TABLE OF DIMENSIONS, ETC., CONTINUED.

LIVERPOOL DOCKS.	Width of Entr'ce.	Sill under Old Dock Datum.	Coping at Hollow Quoins above Sill.	Water Area.	Quay Space.
	Ft. In.	Ft. In.	Ft. In.	Acr. Yd.	Mile.Yd
Salthouse Dock..North Passage	45 0	6 0	32 0	6 2019	784
Wapping Basin....West Passage	40 0	6 0	31 0	1 3151	454
North & South Passage, each	50 0	6 0	32 0		
Wapping Dock....West Passage	50 0	6 0	32 0	5 499	815
South Passage	50 0	6 0	32 0		
King's Dock.....South Passage	42 0	5 0	31 1	7 3896	875
Basin to Queen's Dock	.. ..	.. ..	.. ..	3 3542	445
West Entrances .....North	70 0	6 9	37 9		
South	50 0	6 9	37 9		
Queen's Dock ....West Passage	50 0	6 0	32 0	10 1564	1214
South Passage	60 0	6 6	32 6		
Coburg Dock ....West Entrance	70 1	6 0	32 6	8 26	1053
Brunswick Dock, North Passage	60 0	6 6	33 6	12 3010	1086
Brunswick Hf-tide Dk..Et. Pass.	42 0	5 6	31 6	1 3388	491
West Entrance	45 0	6 0	32 6		
Toxteth Dock....West Entrance	40 0	5 0	31 0	1 469	393
Harrington Dock, West Entrance	29 9	1 2	24 3	0 3740	315
Total Water Area and Quay Space of the Liverpool Docks	.....	.....	.....	212 2240	15 132
LIVERPOOL BASINS.					
North Basin.....	250 0	....	....	6 4528	546
Sandon Basin	200 0	....	....	6 904	702
Prince's Basin	156 0	....	....	4 1549	509
Seacombe Basin	52 0	....	....	0 1805	188
George's Basin	147 0	....	....	3 1852	455
George's Ferry Basin	70 0	....	....	0 1344	160
Manchester Basin.....	36 0	....	....	0 2568	288
South Ferry Basin	60 0	....	....	0 2927	205
Harrington Basin	40 0	....	....	0 3917	308
Total Water Area & Quay Space of the Liverpool Basins	.....	.....	.....	23 3034	1 1600
Total Water Area & Quay Space of the Liverpool Docks	.....	.....	.....	212 2240	15 132
Total.....				235 4274	16 1732
BIRKENHEAD DOCKS.					
Wallasey Pool....Western Float	.. ..	....	.. ..	52 319	2 210
Ditto .....Eastern Ditto	.. ..	....	.. ..	59 3786	1 1506
Ditto .....Passage	100 0	7 6	33 6		
Do. Basin, near Canada Works, W.	50 0	....	.. ..	1 2554	543
Ditto, Ditto.....East	50 0	....	.. ..	1 84	390
Ditto, Railway Company's Basin	.. ..	....	.. ..	0 606	113
Egerton Dock ....West Passage	70 0	5 6	28 6	3 4011	754
Morpeth Dock ....West Passage	70 0	5 0	30 0	3 1189	790
East Entrance	50 0	5 0	30 0		
Total Water Area & Quay Space of the Birkenhead Docks ..	.....	.....	.....	121 2869	5 786
Total Water Area & Space of the Liverpool Docks and Basins	.....	.....	.....	235 4274	16 1732
Total.....	.....	.....	.....	357 2303	22 758

GRAVING DOCKS.	Width of Entr'ce.	Sill under Old Dock Datum.	Coping at Hollow Quoins above Sill.	Length of Bottom.	Total Length at Bottom.
	Ft. In.	Ft. In.	Ft. In.	Lineal yd.	Lin. yd.
500-feet Lock and Graving Dock..	100 0	7 9	35 9	.. ..	167
Huskisson Lock and Graving Dk.	80 0	6 6	44 6	.. ..	132
Sandon GravingDks., No. 1—East.	60 0	3 6	29 6	180	
No. 2 ,,	70 0	3 6	29 6	180	
No. 3 ,,	60 0	3 6	29 6	180	
No. 4 ,,	70 0	3 6	29 6	180	
No. 5 ,,	45 0	3 6	29 6	180	
No. 6—West	45 0	3 6	29 6	180	
Clarence Graving Docks..					1080
No. 1—Outer Gates..	45 0	3 0	29 6	135	
No. 1—Inner Gates..	45 0	0 6	18 6	97	
No. 2—Outer Gates..	45 0	3 0	29 6	138	
No. 2—Inner Gates..	32 10	0 6	18 6	96	
		Sill above Old Dock Datum			466
Canning Graving Docks....No. 1	35 9	1 8½	21 6½	147	
		Sill under Old Dock Datum			
No. 2	35 9	0 0½	23 4	160	
					307
Queen's Graving Docks....No. 1	42 0	1 8½	29 4½	146	
No 2	70 1	1 8½	29 4	145	
					291
Brunswick Graving Docks..No. 1	42 0	2 6	29 0	133	
No. 2	42 0	2 6	29 0	133	
					269
Total measure at the bottom	.....	.....	.....	.....	2709

DUKE OF BRIDGE-WATER'S DOCK.	Width of Entrance.	Level of Sill.		Level of Coping above Sill.		Water Area.
		Abv. Datum	Blw. Datum			
	Ft. In.	Feet Inch.	Feet Inch,	Feet	Inch.	Ac. Yd.
Outer Gates	40 0	.. ..	4 6			
Middle Gates.....	28 10	0 6	.. ..	30	0	
Inner Gates	40 0	.. ..	6 0	22	3	2 1336
				31	0	
CORPORATION DOCKS.						
River Craft Dock, Lock, and Eagle Basin ..	.. ..	.. ..	.. ..	..	..	
Outer Gates	30 0	0 3	.. ..	25	1	1 3416
Inner Gates	30 0	1 3	.. ..	24	7	